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# AIR CONDITIONING AND REFRIGERATION

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**INSIDE DOPE**  
by GEORGE F. TAUBENECK

Story of the Week  
Advanced Paternalism  
In Cleveland  
And the Music Goes  
'Round and 'Round  
Carrier on Wings  
General Electric's Ideas  
On Labor Legislation  
Taxes and What They  
Can Do to People

## Story of the Week

A certain celebrated novelist had been working on his latest epic far into the night. His wife, whose sleep was disturbed by the continuing brilliance of his 100-watt light bulb, in addition to his frequent sighs, called out:

"Why don't you stop writing and come to bed?"

"I can't," testily replied her husband. "The heroine is at the mercy of the villain, and I've got to rescue her."

"How old is the heroine?" inquired his spouse.

"Twenty-three," he muttered.

"Well, then for heaven's sake come on to bed. She's old enough to look after herself!"

## Advanced Paternalism In Cleveland

While attending the Heating and Ventilating Exposition in Cleveland a fortnight ago, we took time off to visit our old friend, Ray Legg, who is now running the new refrigeration division of Jack & Heintz.

The dynamic, masterful Mr. Legg, who established quite a reputation for himself in the appliance business during his years with Kelvinator and Leonard, is quite like he has always been—more so, probably.

And the fabulous Jack & Heintz operation left us a bit on the stunned side.

No doubt most of the readers of this column have heard many stories about the lengths to which this Cleveland manufacturing enterprise has gone to make its workers happy. Well, they're all true. Believe it or not.

Steaming coffee urns appear alongside the rows of machine tools. Everybody eats a free lunch in company cafeterias. Turkish baths and masseurs are available at all times to any laborer. And the executives do their best to act unlike executives.

(Don Fairchild, advertising manager, escorted us through four of the Jack & Heintz plants. Everywhere we went, up and down the production and assembly lines, workingmen greeted him with a: "Hi, Don, What's new, Don?")

## And the Music Goes 'Round and 'Round

But the music was what got us most of all. Never a dull moment for the ears of J. & H. workers. Loud speakers in all plants and offices are connected with a central control room which broadcasts records and radio programs continuously to boost the morale of everyone connected with this business.

This central control room looks much like a big radio broadcasting station. Squired by the aforementioned Mr. Fairchild, we were shown around this spot shortly before noon on that day.

To the girl-in-charge, Mr. Fairchild remarked:

"We'll be lunching at 12:30 in the cafeteria. Ask our guest to name a request number."

Trying to act smart, we suggested Brahms' Fifth Hungarian Dance.

(Concluded on Page 6, Column 3)

## 6 More Dept. Stores Start Frostmaster Frozen Food Sales

SYRACUSE, N. Y.—Initiation of over-counter and home-delivery frozen food operations by six more department stores brought to more than 20 the number of Frozen Food Foundation members using all or part of the Frostmaster plan for integrated frozen food merchandising.

The six are Herpolsheimer's, Grand Rapids; Donaldson's, Minneapolis; The Golden Rule, St. Paul; Joske's, San Antonio; Polsky's, Arkon; and Maas Bros., Tampa. Mass Bros. is the 13th store to use the complete Frostmaster plan.

Still another, Gebhart-Gushard Co. in Decatur, Ill., a major department store division of Alden's, Inc., has in process plans to establish both over-counter and home-delivery frozen food departments. It recently became the 57th of the U. S. and Canadian department stores and other organizations to affiliate with the Foundation.

Among the 20-odd Foundation members with major frozen food departments are such other stores as Marshall Field, Chicago; Shillito's, Cincinnati; Frostore, Philadelphia; Sibley's, Rochester; Frederick & Nelson, Seattle; Jordan Marsh, Boston; and the Seattle Bon Marche.

Briefly, the Frostmaster plan involves a home-delivery service, an over-counter section in the store, and sale or rental of frozen food cabinets. Other phases of the plan are concerned with equipment for carrying out these operations and scientific controls.

These operations generally have grown out of intensive experimental work carried on in Syracuse over the past two years under the general guidance of Frozen Food Products, Inc., and Dey Bros. store, both Foundation members. Frozen Food Products, whose members include Paul Mazur, an investment banker, Carrier Corp., and Aviation Corp.,

## NEWA Sets May 4-8 For 38th Meeting

NEW YORK CITY—More than 1,000 members and guests are expected to be in attendance when the National Electrical Wholesalers Association holds its 38th annual convention in Atlantic City May 4-8, according to Charles G. Pyle, managing director. Convention headquarters will be at the Hotel Traymore.

Theme of the convention will be opportunities for distribution in "The Coming Electrical Age."

Two special afternoon programs are being planned, one by the appliance division (E. B. Ingraham, chairman) on May 5 and the other by the apparatus and supplies division (D. M. Salsbury, chairman) on May 7. George E. Whitwell, vice president of the Philadelphia Electric Co., will be the keynote speaker at the former meeting, and R. Stafford Edwards,

(Concluded on Page 4, Column 5)

## Panelectric Adjudged Bankrupt by U. S. Court

SOUTH NORWALK, Conn.—Panelectric Corp., manufacturer of a combined home freezer and ice cuber, has been adjudged bankrupt by the U. S. District Court in Hartford, Conn., on a petition filed by the firm, according to Saul Berman, U. S. Referee in Bankruptcy.

First meeting of the company's creditors has been scheduled for 11 a.m. Feb. 21, in room 321, U. S. Post Office Bldg., Bridgeport, Conn.

## New Equipment Makes Bow at Western Marts

SAN FRANCISCO—Refrigeration equipment made by western manufacturers which hadn't been exhibited heretofore attracted attention of the nearly 6,000 buyers from the west, Hawaii, Alaska, Canada, and Mexico who flocked to the week-long Winter Market at the Western Merchandise Mart here.

Even though many appliances and durables continue to be delivered on an allotment basis, buyers at the mart were carefully selecting merchandise.

"They are not buying anything they can get their hands on, as they did 10 months ago," said one representative.

The 25th semi-annual Western Radio and Appliance Dinner, held during the week of the mart, was attended by more than 1,000 buyers and exhibitors.

An open top, self-service frozen foods dispenser named the "Salesmaster" was unveiled by the Modern Appliance Co. of San Mateo, Calif., at the mart. Made by the Don L. Johnson Co. of Tacoma, Wash., the Model 24 Salesmaster is a 22-cu. ft. cabinet with a capacity for 600 packages of frozen foods, and is priced at \$1,100.

Extra large Dole plates and 5-in. thick fiberglass insulation are featured

(Concluded on Page 4, Column 1)

## Inventory Curbs on Durables Transferred

WASHINGTON, D. C.—Numerous retail items have been dropped from inventory restrictions through the recent revocation of Order L-219, but the "practical minimum working inventory" restrictions of Priorities Regulation 32 still apply to such consumer goods as mechanical refrigerators, electric water heaters, ranges, washing machines, vacuum cleaners, ironers, and sewing machines, according to the Civilian Production Administration.

Some of the items formerly listed in Direction 1 to L-219 have been transferred to Table 3 of PR-32, which lists specific exemptions from inventory control. These include clocks, watches, luggage, and similar items.

L-219 went into effect early in 1943 and applied to retail merchants whose minimum yearly inventories amounted to \$50,000, or whose annual sales were \$200,000. The announced purpose of this order was to insure even distribution of scarce consumer goods so that small merchants would

(Concluded on Back Page, Column 3)

## L.C. Warren Heads Warren Co. In Personnel Shifts

ATLANTA—Lovic C. Warren has been elected president of the Warren Co., Inc., here, manufacturer of commercial refrigerators, to succeed his brother, Virgil P. Warren, who becomes chairman of the board.

In other shifts at the executive level, John D. Harris, formerly secretary-treasurer, was elected vice president; Theron E. Scarbrough becomes treasurer; and Roger D. Jacobs becomes secretary.

Clyde C. Turner has also been named assistant secretary and is in charge of handling orders; Virgil P. Warren II, the son of the new president who served as a refrigeration instructor with the Army during the war, has been placed in charge of production. Thomas G. Smith, as executive assistant to the new president

(Concluded on Page 4, Column 5)

## Com'l Unit Standards Postponed to May 20

WASHINGTON, D. C.—Effective date for the new standards on commercial condensing units has been postponed from the recently announced Feb. 20 date to May 20, announces F. E. Powell of the National Bureau of Standards.

Since the original announcement, "we have received from several manufacturers producing a substantial volume of these units, urgent requests for reconsideration of the effective date, to allow time for formulation of a revision clarifying the intent of the standard in the light of postwar industry developments," explains Mr. Powell. "We understand that action towards such revision as many be indicated, is to be taken in the very near future."

The standards in question are officially titled "Commercial Electric Refrigeration Condensing Units, Commercial Standard CS107-45."

## Freezer Shipments Up 72% In 3rd Quarter

WASHINGTON, D. C.—Factory shipments of home and farm freezers by manufacturers reporting to the U. S. Bureau of Census totaled almost 50,000 units, valued at \$10 million, for the third quarter of 1946.

This represented an increase of 72% over the 29,000 units reported shipped in the second quarter of 1946, the bureau reported. As in previous periods, nearly all the freezers shipped were self-contained.

While the shipments of self-contained freezers during the second quarter of 1946 were concentrated in the 12.1 to 15.9 cu. ft. size, during the third quarter there was a shift to the under 6 cu. ft. size group. This latter classification, which had

(Concluded on Back Page, Column 1)

## Locker Assn. Widens Educational Program

FORT PLAIN, N. Y.—Adoption of a new and greatly expanded program of public relations accentuating educational and merchandising methods and retention of a public relations secretary on a full-time basis are announced by the National Frozen Food Locker Association.

The program, approved by the association's board of directors at its last meeting in St. Paul, Minn., will be under the direction of the public relations committee. Keith J. Bauder, of Fort Plain, is chairman.

George R. Schiemer, of Syracuse, N. Y., has been retained as the public relations secretary.

In emphasizing educational methods, the committee plans to expand the larger share of its labor in production of booklets, pamphlets, mailing pieces, manuals, and advertising material.

## Institute To Handle All Locker Meeting Exhibits

OMAHA, Neb.—All arrangements regarding exhibits in connection with the annual meeting of the National Frozen Food Locker Association in the Municipal Auditorium at Kansas City, Mo., next Sept. 22-25 will be handled by the Frozen Food Locker Institute, formerly the Frozen Food Locker Manufacturers & Suppliers Association, announces R. R. Farquhar, executive director of the institute.

Details of the exhibits and hotel reservations for convention exhibitors will be handled through the office of the institute at 656 Insurance Bldg., Omaha, he added.

## Appeals Court Rules Potter Patents Invalid

### Potter vs. Stewart-Warner Decision Reverses Stand Of Lower Court In 1944

CHICAGO—Holding that the three Potter patents involved in the Stewart-Warner Dual-Temp case are invalid, the United States Circuit Court of Appeals here, has reversed a lower court's decision made in 1944 which found Stewart-Warner guilty of infringement and ordered the company to pay damages totaling \$238,000 to Potter Refrigeration Corp. and Refrigeration Patents Corp. (Potter's patent-holding firm).

It is considered unlikely that the Potter interests will take the case to the Supreme Court, according to some quarters, because the latest court action was based to a considerable extent on a recent Supreme Court decision in a similar case: *Halliburton Oil Well Cementing Co. vs. Walker*.

In the original suit heard before the U. S. District Court here, Stewart-

Complete text of the decision handed down by the U. S. Circuit Court of Appeals in the Potter vs. Stewart-Warner case is published on pages 24 and 25 of this issue.

Warner was ordered to pay \$225,000 damages to Refrigeration Patents Corp. for infringement of the Bronaugh & Potter patent No. 2,056,165, and \$13,000 damages to the Potter Refrigerator Corp. for infringement of Potter patent No. 2,171,712. No damages were allowed for alleged infringement of patent No. 2,258,959.

Decision of the Appeals Court judges, William M. Sparks, Otto Kerner, and Robert C. Baltzell, said, in part:

"We have studied the claims of the patents in suit, the points raised in appellees' brief on the issue of clarity of phraseology, and the Supreme Court's opinion in the Halliburton case, supra. We conclude there has been such a want of clarity that, as a matter of law, the patents must be held invalid. . . .

"There was in the appellees' alleged invention no new result—there was an allegedly improved result—i.e., non-frosting coil, and non-dehydrating of foods, which improvement the jury's verdict established.

"The Court in the Halliburton case, supra, was dealing with a combination machine claim, and it stressed again and again the need for clarity of the new element claimed, the differentiation from the known existing combinations."

(Concluded on Back Page, Column 1)

## 30 Air Conditioned Buses Delivered to Atlanta

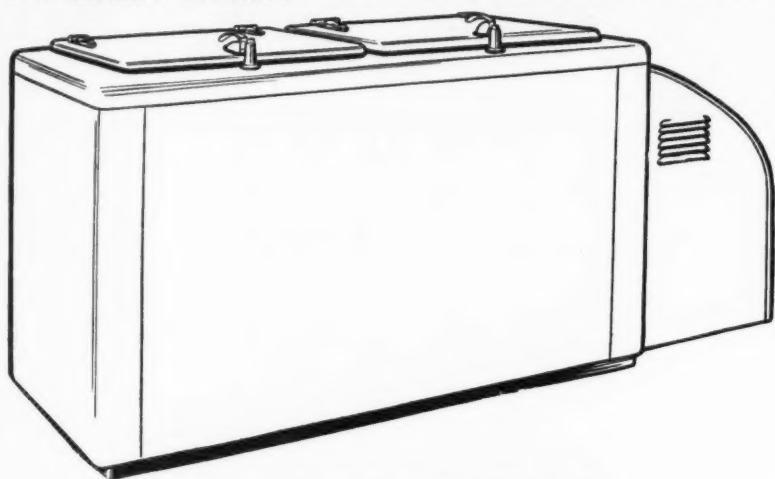
ATLANTA—The first large installation of air conditioned trolley coaches in the United States was made here recently when the Georgia Power Co. received 30 air conditioned vehicles from the Pullman-Standard Car Mfg. Co.

Purchase of the coaches follows an experiment conducted by Georgia Power in the fall of 1945 to determine the preference of Atlantans for air conditioned transportation. At that time, as reported in the Nov. 5, 1945, issue of the NEWS, 93% of patrons taking their first ride on an air conditioned trolley coach declared that air conditioning was a great improvement and that they were all in favor of it. Some even said that they would approve a raise in the fare to have air conditioning.



## SANITARY FREEZER CABINETS

The **FINEST CABINET** FOR YOUR CONDENSING EQUIPMENT



### 12.5 CUBIC FOOT MODELS NOW AVAILABLE COMPLETE—LESS CONDENSING UNIT

Attractively modern in style, heavily built with steel welded frame, rich in many unusual and exclusive quality construction features, **SANITARY** Freezer Cabinets are now in quantity production.

Each cabinet is complete with freezer plates, cold control and "Freon-12" expansion valve requiring merely installation of your own condensing unit. Typical of **SANITARY** design and engineering, every detail in these Freezer Cabinets is aimed at long service life, high efficiency in food freezing and storage—at lowest operating costs.

PLACE YOUR ORDER TODAY for these "top quality" **SANITARY** Freezer Cabinets.

**PRICES REDUCED**  
**FEBRUARY 1**

### SANITARY REFRIGERATOR COMPANY

Manufacturer  
Fond du Lac, Wisconsin

Ice Refrigerators For More Than 40 Years. Quicfrez Farm Locker Plants Since 1939

## Domestic Power Use Up, New TVA Survey Shows

KNOXVILLE, Tenn.—A survey recently completed by the Tennessee Valley Authority indicates that domestic consumption for the last fiscal year was up 149 kwh. per customer over the 1,745 kwh. for 1945. This was in spite of the fact that appliances were not yet generally available.

In 1945, according to TVA statistics, 60% of all residential users had refrigerators, 25% ranges, 11% water heaters, 87% radios, and 32% washing machines.

Average cost per kwh. had been reduced from 1.85 cents during the previous year to 1.78 cents in 1946 in the area served by TVA, according to the report. The number of its farm customers had increased by 25,600 during the year.

The TVA reported also that it has been cooperating in the development of reverse-cycle system for heating in the winter and cooling in the summer.

Stuart Fonde, Knoxville businessman, who has pioneered in the development of the reverse-cycle system, was quoted as estimating that the system can be employed in a home for not more than \$55 for the entire year.

### Texas Service Firm Organized

ITASCA, Tex.—Kemp-Gregor Refrigeration Service opened here this month with Elmo Kemp and A. J. Gregor as the new co-owners and operators.

## Six More Stores Join Frostmaster Plan--

(Concluded from Page 1)

was formed in 1943 and the Foundation in 1945.

In developing their frozen food services, member firms rely on the Foundation's technical staff and extensive laboratory facilities for such services as product testing, personnel training, product development, packaging methods and designs, promotional and public relations assistance, recipe and menu development, and equipment and processing layouts. Through their Foundation membership, they also get first call in their areas on Frostmaster merchandising methods and equipment developed by Frozen Food Products.

When a store decides to adopt the complete Frostmaster set-up, here is the procedure it follows, generally speaking:

Sales training and promotional programs and other assistance as noted above are secured from the Foundation. Some stores send their home economists to the Foundation for a course in frozen food handling, promotion, and home use.

Special equipment, such as order-filling units and refrigerated trucks, are purchased from Frozen Food Products for the home-delivery service. Display cases are secured for the over-counter department, and Frostmaster storage cabinets for sale at \$149.50, or for rental.

Since it has been found that food deliveries must be made within a concentrated area to be economically successful, promotional work is undertaken in a carefully selected section. Prospective customers are sent letters telling them that a store representative will come to their homes to discuss the plan.

As soon as a sufficient number of customers are secured, the delivery service is begun, with deliveries usually on a weekly basis. The store (often through a special staff) telephones the customer at a given time each week. Deliveries ordinarily are timed so that a patron will receive items on the same day and at approximately the same time of day.

Customer instruction and assistance is provided by stores' home economists. Their varied duties include aid in food selection at the store, visits to the homes of Frostmaster cabinet purchasers, preparation of menus and price lists, staging demonstrations, and other promotional and educational work.

In addition to this, frozen food recipes and cooking information prepared by the Foundation are sent to customers.

Some stores limit sales of the storage cabinets to those customers who

can be handled under the food service, since this service and the freezer sales are considered as one package. However, the stores ordinarily serve anyone within the area regardless of where his storage cabinet was purchased.

Reports from stores who have put the system into operation show the following results, according to William Burston, president of the Foundation, divisional merchandise manager in charge of food for Allied Stores Corp., and recently named vice president of Frozen Food Products:

1. One out of every five customers solicited in their homes have been sold either the cabinet and food service or the service.

2. Almost 3,000 persons approached by the first six stores using the plan decided to take the delivery service. They represented an annual potential business of \$740,000.

3. Ten customers daily are signed up for the delivery service by an average crew of five store solicitors.

4. Initial operation seems to result in the same percentage of acceptance per number of calls in every city, regardless of size. It was explained that this is so because, although the actual number of families varies with the population, every city has the same percentage breakdown of income groups. The same number of solicitors in a crew, therefore, will get the same number of customers until all prospects in the upper-income brackets have been contacted.

Although several stores now use the complete plan, others have adopted variations of it because of local conditions. The Foundation feels that the best results are produced with the complete plan and claims that intensive test operations indicate "this selling system can produce annual food sales of \$250 per customer in home delivery services, and about \$300 per square foot of selling space in over-counter departments."

## Steel, Brass, Aluminum Offered In WAA Sale

NEW YORK CITY—A closed bid sale of new steel, brass, and aluminum in various forms is being conducted here by the local office of the War Assets Administration. Final day for entering bids has been set for Feb. 24.

Being offered in the sale are: 20,000 ft. of cold drawn alloy steel tubing in various sizes, 1,357 lbs. of  $\frac{5}{16}$  in. O.D. carbon steel tubing 6 to 18 ft. long, 2,000 lbs. of stainless steel tubing, 2,500 lbs. of stainless steel bars with 2 in. hex, 12,000 lbs. of round tool steel.

Fifteen hundred lbs. of  $\frac{1}{16}$  in. aluminum rods, 1,000 lbs. of .091 in. coiled wire aluminum, 2,500 lbs. of aluminum bronze rod, 1,420 lbs. of  $\frac{1}{2} \times 6 \times 12$  ft. flat brass, 9,000 lbs. of naval brass hex rod, 8,000 lbs. of naval brass rod 5 in. in diameter, 2,000 lbs. of commercial brass hex rod  $\frac{5}{8} \times 4$  ft., and 824 lbs. of low brass sheet.

## Bader Heads Tulsa Dealers Association

TULSA, Okla.—The Tulsa Commercial Refrigerator Sales Association, an organization of local commercial refrigerator dealers, came into being here Feb. 1.

W. C. Bader, Hussmann distributor, was elected president. M. E. O'Bannon, Tyler distributor, was named vice president. W. B. Co McCray distributor, became secretary-treasurer.

## North Enters 25th Term As President of League

CLEVELAND—Jack North, general sales manager of the Cleveland Electric Illuminating Co. enters upon his 25th successive term as president of the Electrical League here following his recent re-election.

At the same meeting L. T. Blaisdell, commercial vice president for G-E, and W. L. Howlett, manager of Westinghouse Electric Supply Co. in Cleveland, were both appointed vice presidents of the Electrical League. Other officers for 1947 are S. E. Strunk, secretary, and H. Hutchisson, treasurer.

Board members for the league are chosen from among local leaders in the electrical industry representing manufacturers, wholesalers, dealers, contractors, department stores, motor repair agencies, as well as the Cleveland utility.

## National Commercial Assn. Officers Confer



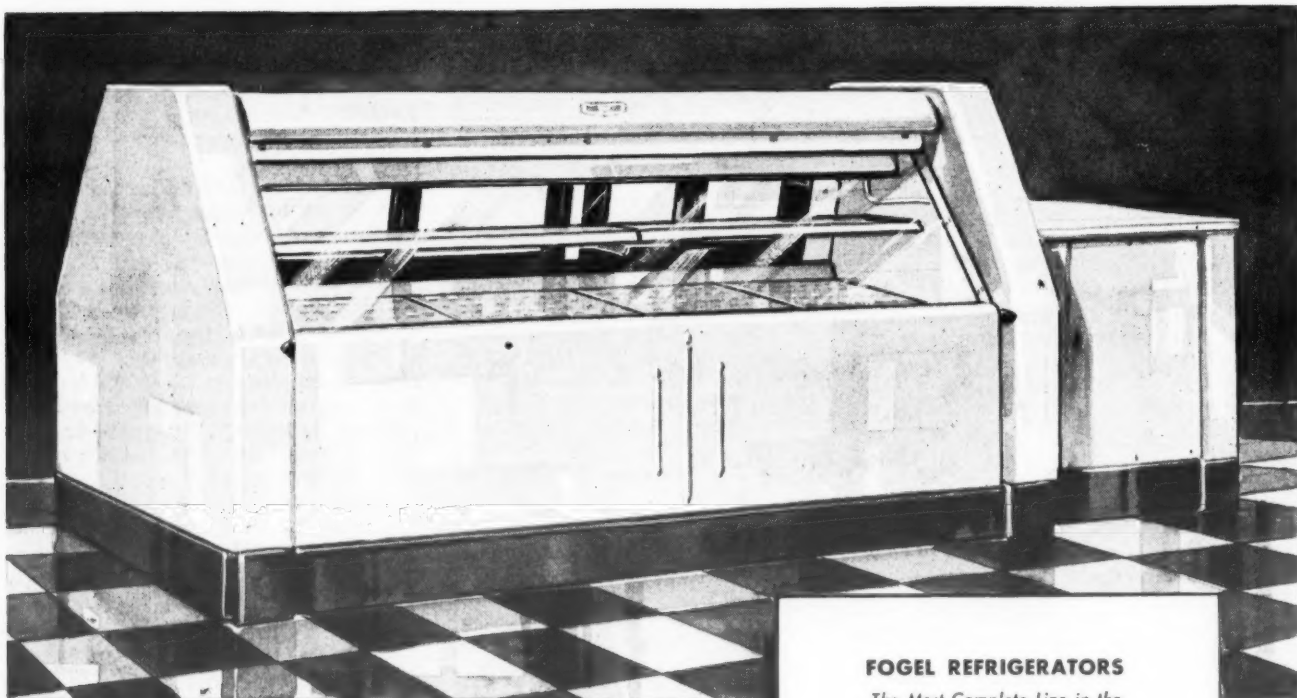
George B. Herman (right), president of the recently formed National Commercial Refrigerator Sales Association, is shown conferring with officials of the association in Raleigh, N. C., on plans for the coming year. With him are Walter H. Jones (left), director, and A. J. Edmundson, secretary, who stated that for the duration of his office the headquarters for NCRSA would be maintained in Raleigh.

## COLD FACTS



about

## FOGEL REFRIGERATORS



### MODEL 5000 ★ All Purpose Display Case

This case, the product of 42 years' experience, is built with a knowledge of your problems and an earnest desire to overcome them.

The streamlined design of a Fogel case is distinctively modern, but at the same time, dignified and conservative. Instead of being flashy today and "out of style" next year, this equipment will bring your store up to date and keep it that way for many years to come.

This trade mark indicates genuine Fogel Equipment



5400 Eadom St. (1 Block North of Frankford Arsenal) Je 5-8300

### FOGEL REFRIGERATORS

The Most Complete Line in the Industry. Available for Immediate Delivery!

#### WALKIN COOLERS

Complete range of sizes

#### REACH IN REFRIGERATORS

20 cubic feet  
40 cubic feet  
60 cubic feet

#### FROZEN FOOD DISPLAY AND STORAGE CABINETS

#### BOTTLED BEVERAGE COOLERS

#### DISPLAY CASES

#### WALL CASES

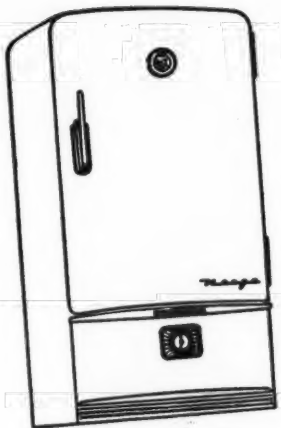
#### SELF SERVICE EQUIPMENT

When in Philadelphia you are cordially invited to inspect our plant

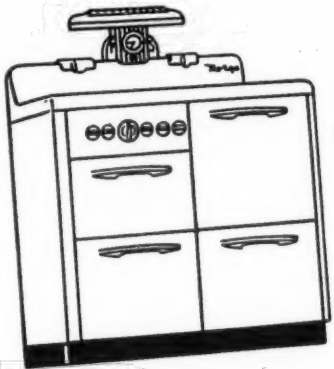




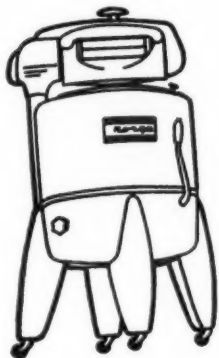
ELECTRIC RANGES



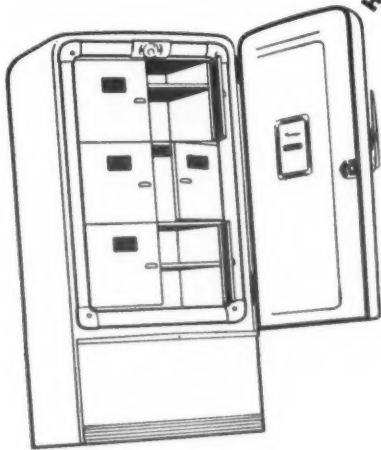
"ROLLATOR" REFRIGERATORS



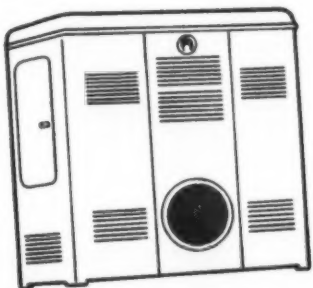
GAS RANGES



"RO-TA-TOR" WASHERS



HOME & FARM FREEZERS



HOME HEATERS

SIX LINES...  
SIX LEADERS

**NORGE**

HOUSEHOLD APPLIANCES  
ARE BUILT TO BE THE

**GREATEST VALUES  
IN THE FIELD**

Each Norge product is a leader in its field.  
Each is easy to sell. Each brings pleasure to  
the buyer and profit to the dealer.

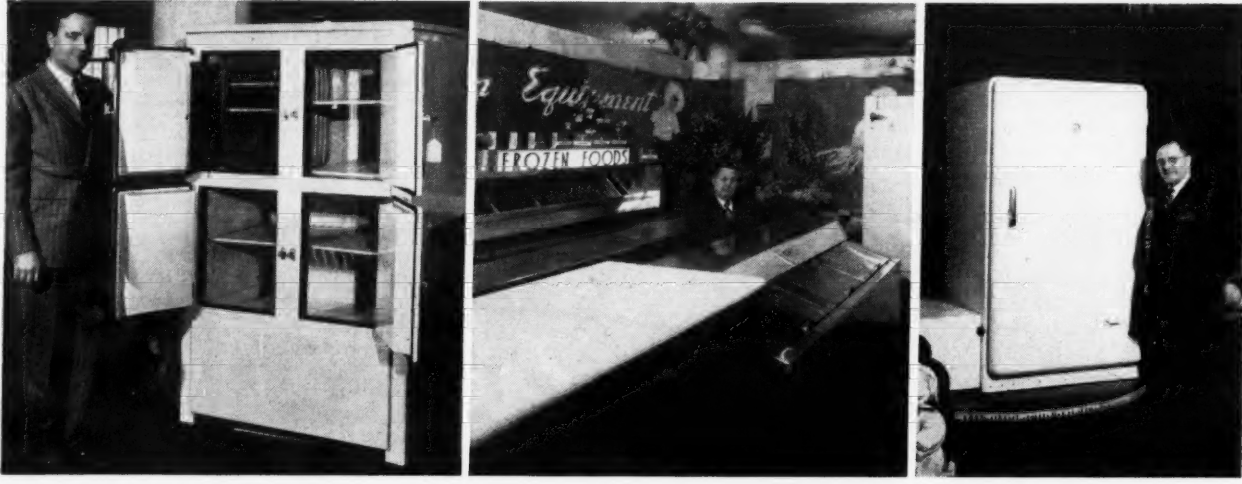
**A BORG-WARNER INDUSTRY**

Norge is the trade-mark of Norge Division, Borg-Warner Corp., Detroit  
26, Michigan. In Canada: Addison Industries, Ltd., Toronto, Ontario.

SEE  
**NORGE**  
BEFORE YOU BUY



## New Refrigeration Items Are Shown In West



Commercial and household refrigeration equipment made on the west coast attracted much attention at the recent Winter Marts held in San Francisco and Los Angeles. P. L. Webster (left), manager of U. S. Grant Supply Co.'s refrigeration division, shows the interior of his firm's 21 cu. ft. model; Charles R. Rogers (center), owner of Modern Appliance Co., is seated behind the "Salesmaster" stainless steel frozen food dispensing cabinet made by Don J. Johnson of Tacoma, Wash., while Harry D. Bean (right), regional manager of Chapman Refrigerator Co., Corvallis, Ore., poses besides the Chapman 15 cu. ft. home freezer designed for remote installation of condensing unit.

### Western Marts --

(Concluded from Page 1, Column 3)

in the case, which is powered by a 1/2-hp. condensing unit. The liner is of stainless steel while the exterior is aluminum. A fluorescent lighted sign and changeable raised lettering are other features.

Designed for remote installation of its 1/4-hp. condensing unit, a 15-cu. ft. upright home freezer was exhibited by the Chapman Refrigerator Co. of Corvallis, Ore. Uniform temperature throughout the box is claimed as a result of placing ex-

posed coils under each of the six horizontal shelves. Manually controlled temperature ranges from -20° F. for freezing to 0° F. for holding. A thermometer built into the door at eye level shows interior temperature.

Marketed exclusively through Chapman Refrigerator Sales, a subsidiary, the freezer retails for \$547.50. Only 200 units are being produced monthly at present, but the plant has a capacity of 4,000, say company officials, who disclosed that three new models, including one with a self-contained unit, are beyond the blueprint stage and should go into

production sometime this year.

New models of electric ranges, water heaters, portable and built-in room heaters, and transformers were exhibited by Thermador Electrical Mfg. Co. of Los Angeles. The "Master Duty" fan-type heater unit has a 16-blade fan to provide air circulation. Recessed into the wall 4 in., the heater measures 27 1/4 in. high by 16 in. wide. Prices of the manually controlled units range from \$62.70 for the 2,000-watt model to \$75.90 for the 4,000-watt machine. Thermostatic controls cost approximately \$10 extra.

At the radio and appliance dinner

held during the week of the mart, E. Carl Sorby, vice president of the George D. Roper Corp., Rockford, Ill., asserted that customer relations in the entire appliance industry have now reached "the most deplorable state in the entire history of selling."

A return to "good old-time sales religion in caring for the needs of our prospects whether that need be for a 10-cent article or a \$10 item," is needed, he said, adding that the "charge of negligence should not be limited to salesmen." If sales management has been derelict in its duty of training an organization, he warned it is "due for a rude awakening."

A more encouraging note was struck by J. W. Stigall, sales manager of the Lauderall Appliance Division, F. L. Jacobs Co., Detroit, who declared, "The appliance industry is ready now to do the kind of a job that will assure continued prosperity for all of us."

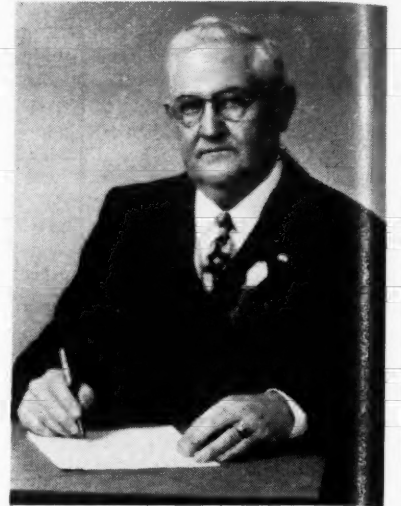
Bright prospects for the automatic home laundry industry were cited by Mr. Stigall. "It is second only to refrigeration in the appliance business, and with the trend toward high unit prices, the washer industry is really pushing refrigeration for first place as a gross dollar producer."

"Just as the electric refrigerator and the automobile started vast new industrial enterprises, so will automatic washer manufacturing and merchandising start new thriving ventures," he said.

Estimating that there are only 800,000 automatic washers in use today as compared with a need for 10,000,000, Mr. Stigall pointed out that "there is plenty of room for continuous expansion."

Predicting a 15 to 20% increase in sales volume over 1946 for appliances and heavy durables, James I. McMahan, president of the McMahan Furniture Co. operating 42 outlets in the southwest, said he expects a 10 to 15% drop in furniture sales as the result of the general price reduction in that field.

### Head Warren Co.



VIRGIL P. WARREN

Becomes chairman of the board of the Warren Co.



LOVIC C. WARREN, Sr.

Has been elected president of the Warren firm.

### Warren Personnel --

(Concluded from Page 1, Column 3)

dent, completes the executive roster. Virgil Warren, the new chairman, was one of the original founders in 1903, and he is also president of the Warren Refrigerator Co. and the Warren Mfg. Co., both of Beaumont, Tex., is an active owner of Larkin Coils, Atlanta, and is active in civic affairs.

L. C. Warren, a veteran of World War I, has been vice president for more than 20 years. He is largely credited with doubling the plant's productive capacity over prewar volume.

Mr. Harris will continue in charge of sales as vice president. He also serves as president of the Commercial Refrigerator Manufacturers Association.

### NEWA Meeting --

(Concluded from Page 1, Column 2) president of Edwards & Co. and president of the National Electrical Manufacturers Association, will speak on the "Go All-Electric" program at the latter.

### Combination Freezer Exhibited by Grant

LOS ANGELES—To enable home freezer dealers to show their customers how to obtain maximum benefits from their units through proper packaging of frozen foods, the U. S. Grant Supply Co. here is now distributing a quick freeze packaging kit with its home freezers, U. S. Grant, head of the firm, has announced.

A demonstration of frozen food packaging using the kit was one of the main features at the U. S. Grant Supply Co. booth at the recent winter market of the Los Angeles furniture mart.

At that market, the firm displayed a combination 21-cu. ft. freezer and refrigerator. The unit provides 3 cu. ft. of space for frozen foods and 18 cu. ft. of refrigerated space. It is said to be suitable for both home and commercial use.

The kit being distributed is the Zer-o-kit, made by the Yorkville Paper Co.

# Freez-all has all

## FEATURES THAT "SET THE PACE"

These consumer-designed features make Freez-All the ultimate in home food freezers.

**1** *Glideasy storage* drawers that open at "the touch of a finger" on ball bearing rollers; can be removed easily yet drawer stops prevent accidental removal.

**2** *Sub-zero sharp freeze* compartment processes from 50 to 100 lbs. of food at a time. Meats, vegetables, fruits, the entire menu, plus pastries are easily processed at home for future use.

**3** *Food segregation* in three well-type drawers that "hold in the cold". All food packages are conveniently separated and are easy to find and remove.

**4** *Hermetically sealed* refrigeration unit requires a minimum amount of attention—another Freez-all feature that assures years of trouble-free service and economical operation.

**5** *"Coat-O'-Cold"* refrigeration plate provides prime surfaces on the top and 2 sides. This assures the maximum in fast freeze and correct storage drawer temperatures.

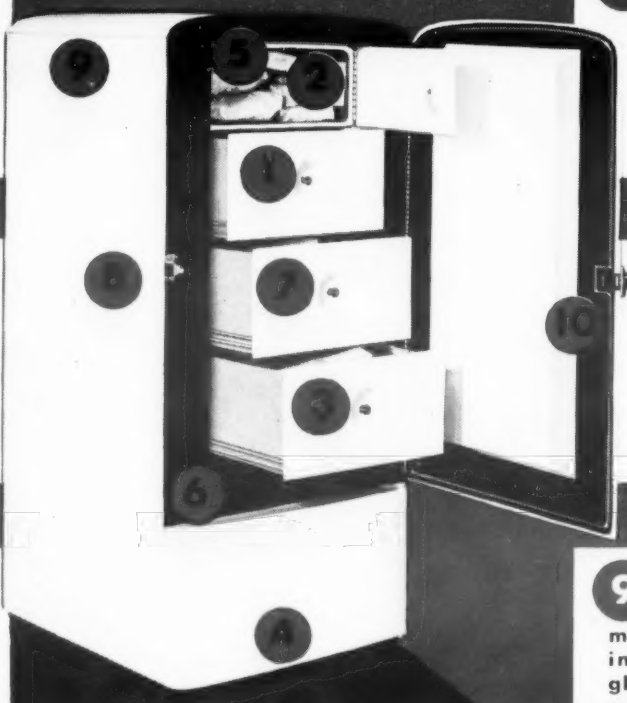
**6** *Insulation.* A thick blanket of insulation around the sharp freeze compartment and storage drawer area holds the cold inside—5" thick in the sides, 6" thick in the bottom.

**7** *Capacity.* A full 8 cu. ft. of usable, easily accessible food storage space is available at "the touch of a finger", in spacious yet space saving Freez-all.

**8** *Cabinet finish* is Dupont Dulux, baked on at high temperatures. This permanent, lustrous, white finish is easy to keep clean and beautiful all the time.

**9** *Beautiful, modern, streamlined* design. A masterpiece of lovely styling, Freez-all's stately, gleaming white elegance proclaims its superior qualities.

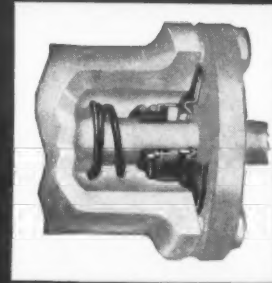
**10** *Modern hardware* of rugged brass, chromium plated, combines enduring strength with striking beauty. Piano-type door hinge for perfect door fit.



# Freez-all

THE ORIGINAL DRAWER TYPE FREEZER

Product of  
REFRIGERATION DIVISION, DEPT. F-12, PORTABLE ELEVATOR MFG. CO., BLOOMINGTON, ILL.



ROTARY SEAL  
REPLACEMENT UNITS  
for  
Refrigerator Compressors

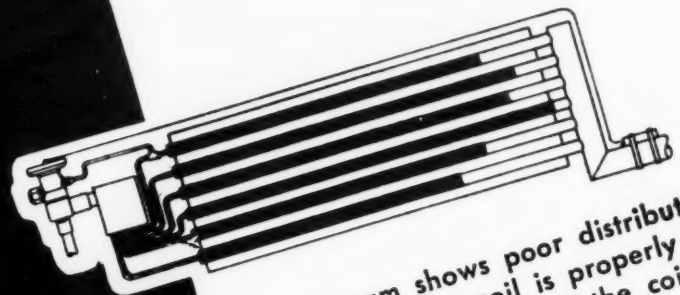
Available for Over 752 Models  
of Refrigerating Assemblies.

Rotary Seal has pioneered in the manufacture of mechanical shaft seals. Because of this specialization it offers the best in shaft sealing.

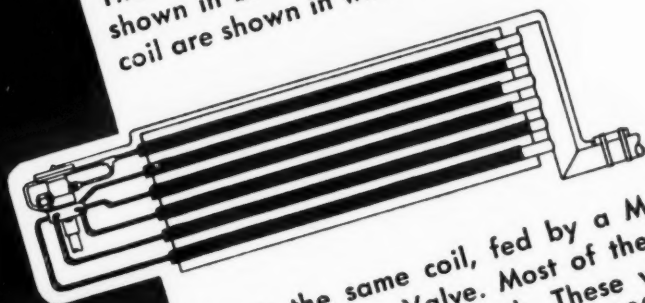


ROTARY SEAL COMPANY  
2020 N. LARRABEE ST., CHICAGO 14, ILL.  
Canadian Office: 382 Victoria Ave., Montreal 6, Canada





This diagram shows poor distribution. Only part of the coil is properly fed. The working portions of the coil are shown in black. "Loafing" parts of the coil are shown in white.



This is the same coil, fed by a Multi-Outlet Thermo Valve. Most of the coil is now doing real work. These valves increase coil capacity up to 25%.

# ALCO

## MULTI-OUTLET THERMO VALVES PUT LAZY CIRCUITS TO WORK ONE OUTLET FOR EVERY CIRCUIT



Poor refrigerant distribution that lets some circuits loaf often wastes  $\frac{1}{3}$  to  $\frac{1}{2}$  of coil capacity. The cure: install an ALCO Multi-Outlet Thermo Valve. It assures:

- The refrigerant liquid is accurately metered at the point of expansion to all coil circuits
- Even distribution regardless of load changes
- Constant full coil capacity — every circuit always on the job
- Accurate control — no "hunting" or "cycling"
- Longer "off" cycle — Lower operating cost

Available at your wholesaler's for all refrigerants, all requirements:  $\frac{1}{2}$  to 50 tons FREON-12, 2 to 36 outlets. Ask for our Bulletin 180.



Designers and Manufacturers  
of Thermostatic Expansion  
Valves; Pressure Regulating  
Valves; Solenoid Valves;  
Float Valves; Float Switches.

# ALCO VALVE CO.

853 KINGSLAND AVE. • ST. LOUIS 5, MO.



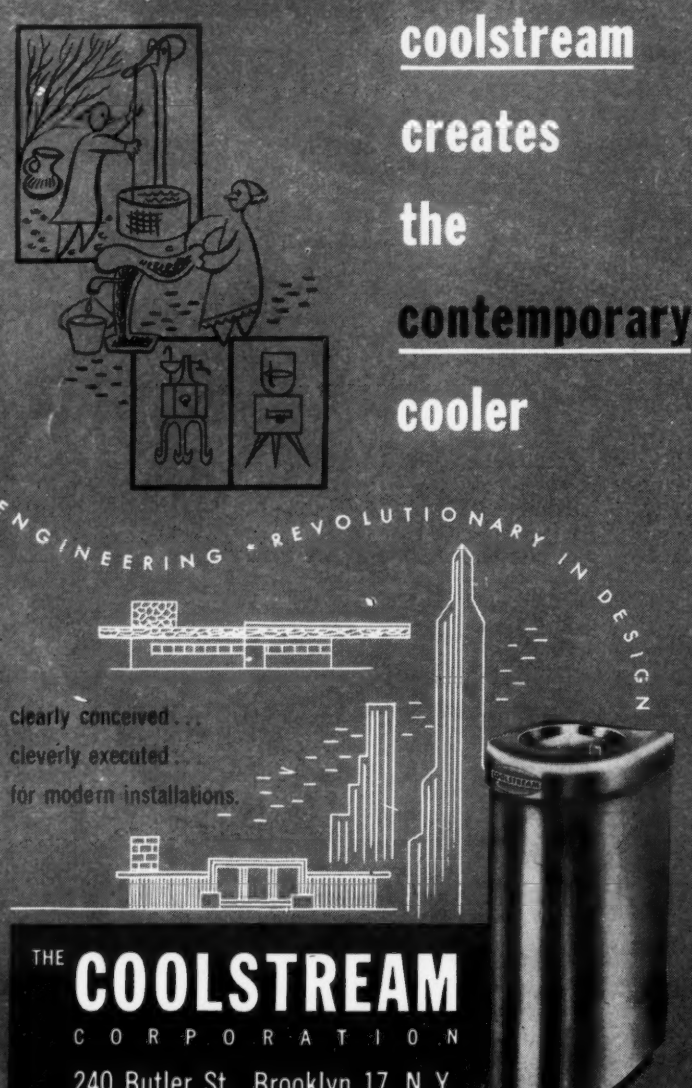
**coolstream**  
creates  
the  
**contemporary**  
cooler

EVOLUTIONARY IN ENGINEERING • REVOLUTIONARY IN DESIGN

clearly conceived...  
cleverly executed...  
for modern installations.

ask your distributor to show you the new coolstream electric water coolers.

THE **COOLSTREAM**  
CORPORATION  
240 Butler St., Brooklyn 17, N. Y.



## INSIDE DOPE

by **GEORGE F. TAUBENECK**

(Concluded from Page 1, Column 1)

"Yes, sir. Would you like to hear the record cut by the Philadelphia Symphony or the Boston 'Pops'?"

Meekly, we chose the Boston 'Pops' and slunk away. She played it, too, and exactly at the stroke of 12:30.

### Carrier on Wings

Exponents of air conditioning by vocation, more than 100 men and women employes of Carrier Corp. through membership in the Carrier Aero Club, are by avocation also concerned with air in aviation.

Organized in the fall of 1943 by a small group interested more in aviation as a discussion topic than from participation in actual flying, the Aero Club grew steadily until it was incorporated in the fall of 1945.

In the meantime, a number of members, principally men who had served in air forces of the Army or Navy, founded the Flying Club and purchased an airplane. Thus it resulted in a club within a club with all members aviation-minded and some who are either qualified pilots or students learning to fly. Since the airplane was delivered last March it has been flown more than 275 flying hours.

Although various pilots have been at the controls, and scores have enjoyed trips as passengers, neither ship nor occupants have ever been injured. In fact, there has never

been a forced landing. The plane is subjected to rigid inspection before each flight and kept in top mechanical condition.

Expense of operating the Flying Club, which covers mostly flying the plane, is met by nominal fees for flights plus membership dues. The dues for membership in the larger group, the Aero Club, are small, just enough to cover costs of mailing and occasional meetings.

Purchase of the plane was made possible by sale of ownership shares numbering 18 at \$100 each. As income from plane operations reduces the amounts due shareholders, fees will be reduced.

John Carroll, assistant office manager, who is an ex-service flyer, is president of the Aero Club, with Daniel Manser, vice president; E. P. Palmatier, secretary; and Harlan Howe, treasurer.

### General Electric's Ideas On Labor Legislation

With the warning that "excess is no solution," the General Electric Co., in a report to its 248,424 stockholders, called for corrective labor legislation to restore "balance in industrial relationships."

"Any measure which seeks reprisal against unions, to put the worker at a disadvantage in collective bargaining, to turn back the clock to strike-breakers and labor-baiters, will do the nation as great a disservice as the creation of an era of strike-makers and management-baiters has done," the report stated.

Asserting that it preferred moderation, fairness, and good will even before there was a Wagner Act, the company asked for reaffirmance of the concept of management as a trusteeship, having three beneficiaries: owners, employees, and the general public.

The report referred to statements to a Senate committee last year by Charles E. Wilson, G-E president, in which he said that "we have passed the era of considering the interest of either management or labor as being pre-eminent. The interests of the consuming public should today be accepted as predominant over everything else." Mr. Wilson further declared that "the best interests of the public demand a full share of responsibility from that newly created but tremendous economic force, organized labor."

"In some such spirit as this, reaching towards readjustment, rather than to retaliation, must a new Con-

gress adjust the balance necessary to the continued trusteeship of business," the company stated. "Inequality of obligation and of responsibility has already done much to destroy the good will essential to collective bargaining, as union leaders have adopted the psychology of warfare and attempted to unify labor by creating a common enemy in the employer. In the common interest, what they have done, must be undone."

The beginning of the UERMWA (CIO) strike a year ago marked not only the end of "an enviable labor record," the G-E report declared, but also marked a turning point, "when management's good will and honest efforts at conciliation did not suffice, but were distorted and deliberately misunderstood, when settlement of difference between General Electric and its workers was subordinated to the weaving of a national pattern of industrial strife."

The company said that this proved there was a lack of balance in industrial relationships. "Developments of the last 12 months have made it increasingly clear that by legislation in the public interest, the balance must now be restored for the protection and progress of all three beneficiaries (stockholders, employees, and the general public)," it was pointed out.

Referring to drives for higher wage-levels, labor must remember that continued investment is necessary for the continuance of technological gains, states the G-E report.

"If all profits are siphoned off into higher wages, it will become impossible for the company to obtain the risk capital necessary for the future conduct of its business, just as it will deprive the public of lower prices and increased purchasing power."

### Taxes and What They Can Do to People

"The village had its one poor street, with its poor brewery, poor tannery, poor tavern, poor stableyard for relays of post horses, poor fountain, all usual poor appointments. It had its poor people, too. All its people were poor. . . . Expressive signs of what made them poor were not wanting; the tax for the state, the tax for the church, the tax for the lord, tax local and tax general, were to be paid here and to be paid there, according to solemn inscription in the little village, until the wonder was that there was any village left unswallowed."—From "A Tale of Two Cities" by Charles Dickens.

## it's New! it's Different!

### ALL-STEEL, O-P-E-N SELF-SERVICE

## Paley ISLE DISPLAY CASE

### for DAIRY PRODUCTS and MEATS



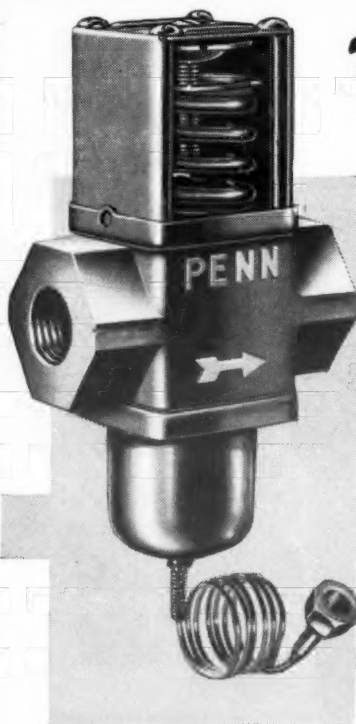
featuring . . .  
**DOUBLE-COIL**  
**"FORCED-DRAFT"**  
Refrigeration

these Paley exclusive advantages give you  
**SUPERIOR PERFORMANCE, GREATER ECONOMY, FOOD PROTECTION!**

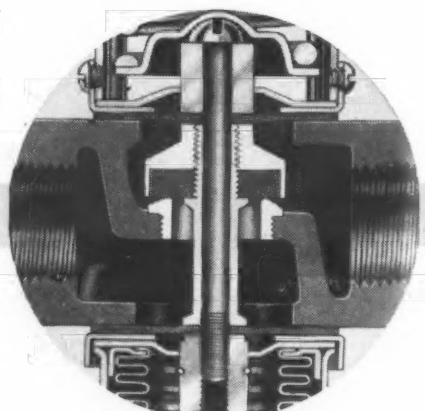
- Double-Coil "Forced-Draft" Refrigeration economically re-circulates cold air, gives uniform temperature control throughout case, regardless of merchandise placement or store temperature!
- "See-through" plate glass panels on both sides, to promote sales on both aisles!
- 14-ga. Bonderized all-steel outer shell and under-carriage; welded, moisture-sealed seams!
- 16-ga. all-aluminum interior, racks, shelves, doors! Ample storage space!
- Stainless steel capping, heat-treated white enamel finish, chrome hardware!
- Fluorescent lighting, menu panels on both sides for greater store-wide display!
- Length: 84 inches; Height: 62 inches; width: 33 inches.

**IMMEDIATE DELIVERY • WRITE TODAY**

**Paley** Manufacturing Corporation  
ENGINEERED REFRIGERATION EQUIPMENT  
244 Herkimer Street • Brooklyn 16, N. Y.



*Here's Why*  
**PENN VALVES** are  
**Different and Better**



Look over that cross-section. It shows the simplified design of PENN 246 Water Valves that protects sliding parts from sedimentation, corrosion and rust. Water cannot come in contact with the range spring and sliding parts. Thus, these better valves are free from the abrasive deposits which cause premature wear and valve failure.

Specify and buy PENN 246 Water Valves for all refrigeration jobs. They're built in threaded and flanged styles—in a wide range of sizes to meet your specific need. Send for Bulletin R-1986-B. Penn Electric Switch Co., Goshen, Ind. Export Division: 13 E. 40th St., New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

**PENN**  
**AUTOMATIC CONTROLS**  
FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



# Food Freezing Seen Curbing Trichinosis

SPRINGFIELD, Mass. — The incidence of trichinosis will probably be greatly reduced when food freezing becomes more popular, says Dr. Robert E. Ober of this city, in a recent issue of the *New England Journal of Medicine*.

Trichinosis is a disease contracted by eating pork infested with the larvae of the parasite, *Trichinella spiralis*. The symptoms of the disease are nausea, abdominal pain, diarrhea, muscular aches and tenderness, fever, cough, and skin rash. The illness sometimes is fatal.

Dr. Ober asserted that the disease is very widespread, "probably being present in about 15% of all cases at autopsy."

He warned that federal inspection of meat and meat products does not insure its freedom from trichinae, since technical difficulties prevent complete examination as a matter of routine.

In Canada, where it is required by law that all garbage fed to hogs be steam cooked, the number of cases of trichinosis is only one-twelfth that in the United States on a proportionate basis.

However, a method has been proposed by S. E. Gould for controlling the parasite by freezing pork at a temperature of 5° F. for 20 days, first cutting it in thin slices, or else keeping it at 0° F. for three days.

"If this measure is generally adopted and all pork refrigerated at the required temperatures," said Dr. Ober, "it is entirely conceivable that a generalized decrease in trichinosis can be anticipated. The growing popularity of home freezer cabinets in the home may be expected to contribute to this end."

## York Shows Gain Over 1945 In Quarter Profit

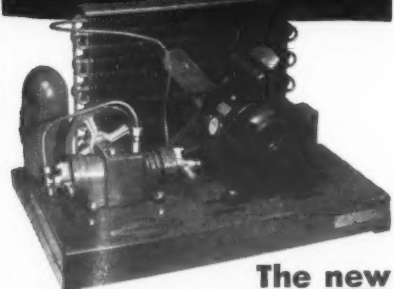
YORK, Pa. — A net profit of \$411,883 for the quarter ending Dec. 31, 1946, has been reported by the York Corp. here. Total sales for the period, including partly completed contracts, amounted to \$10,165,751, the company announced.

Earnings per share were figured at \$4.44.

	1946	1945
Earnings per share	\$4.44	\$3.36
*Total sales	10,165,751	8,035,950
Profit after chgs	654,883	717,752
Income tax prov	243,000	380,215
Contg reserve		
Net profit	411,883	337,537
Orders booked	8,432,358	9,469,963
Uncompl orders not incl in sales	21,437,480	17,103,134

\*Includes partly completed contracts.

## A MIGHTY MIDGET



The new **CONTROLTEMP** 2-Stage Condensing Unit

Air Cooled • 1/2 hp. • Package Type

Immediate delivery—less motor. Motor quotations on request.

Small, compact, efficient. Ideal for frozen food cabinets, reach-ins or showcases.

## CONTROLTEMP CORPORATION

236 Butler St. • Brooklyn 17, N. Y.



Up-to-the-minute discount sheets now available—Late 1946 catalog mailed on request.

**Automatic HEATING & COOLING SUPPLY**  
DIVISION OF WEIL-MCLAIN COMPANY  
647 W. Lake St., Chicago 6, Ill.  
Branch—809 W. 74th St., Chicago, Ill.

## Urner Heads Coast Branch Of Retailers Association

BAKERSFIELD, Calif. — A branch of the National Electrical Retailers Association was formed here recently with Phil Urner as chairman.

The purpose of the Bakersfield branch was given as cooperating with the national association. Guest speaker at the organizational meeting was F. J. McDonald, western representative of the association, who pointed out the advantages of forming the Bakersfield group.

Attending the meeting were representatives from Witham's, Booth's, Trone & Johnson, Weill's, Central Hardware, Bakersfield Appliance, Bakersfield Hardware, Owen's Radio, Tait Radio, The Radio Den.

## Dealership Incorporates

WATERTOWN, N. Y. — Walter H. Bisnett, Inc. has been incorporated here with capital of \$50,000 to deal in electrical appliances. Incorporators are John P. Constable, Rebecca Bisnett, and Joseph H. Hodkinson.

## Appliance Stores High In 'Vital Statistics'

WASHINGTON, D. C. — In 1946 appliance and radio stores stood second as the choice of newcomers to the retail field, with 452 new radio and appliance stores started for every 1,000 in existence, according to Commerce Department figures.

However, the appliance and radio mortality rate was at the top of the list of retail enterprises, with 77 firms quitting business for every 1,000 in existence.

Home furnishings stores showed an entry rate of 359 for every 1,000 and a mortality rate of 37, the Department's figures reveal.

## Old Refrigerator Plant Sold

BUFFALO — The former Heinz & Munschauer refrigerator manufacturing plant here has been purchased by the Knudson Mfg. & Design Co., Inc. and is being geared for the mass production of small incinerators for home use. Plant was acquired from the Schott interests of Cincinnati.

## 3rd Quarter, '46, Home Freezer Shipments As Recorded by U. S. Bureau of Census

(Includes a small number of combination cooler-freezer units)  
Shipments of Complete Units

Size	Total		Self-Contained Units		Remote Units	
	No.	Value (dollars)	No.	Value (dollars)	No.	Value (dollars)
Total	49,627	10,031,246	47,967	9,435,169	1,660	596,077
Under 6 cubic feet	13,790	1,459,889	13,790	1,459,889	—	—
6.1 to 8 cubic feet	—	—	9,774	1,523,222	—	—
8.1 to 12 cubic feet	28,458	5,844,656	8,450	1,817,172	359	73,471
12.1 to 15.9 cubic feet	—	—	9,875	2,430,791	—	—
16.0 to 20 cubic feet	3,998	1,274,403	3,828	1,221,043	170	53,360
Over 20 cubic feet	3,381	1,452,298	2,250	983,052	1,131	469,246

## Purchases of Components

Size	Condensing Unit	Compressor Unit	Forced Air Evaporator	Enclosure Only	Total Purchase Value (dollars)	No. of Plants
	No.	No.	No.	No.		
Total	38,830	5,047	280	506	2,749,980	94
Under 6 cubic feet	9,277	860	12	—	480,744	19
6.1 to 8 cubic feet	5,358	2,418	68	—	307,200	11
8.1 to 12 cubic feet	7,299	998	—	5	477,385	31
12.1 to 15.9 cubic feet	8,435	430	—	9	564,482	34
16.0 to 20 cubic feet	3,615	304	200	208	530,457	42
Over 20 cubic feet	4,846	37	—	284	389,712	23

\*Combined to avoid disclosure of operations of individual companies.



INTERNATIONAL HARVESTER PROVES FREEZER DESIGN CAN BE

*Beautiful...*

AND PRACTICAL, TOO!



## "Eye Appeal"—another important sales-stimulating Harvester Feature

"It's truly beautiful!" That's what women say about the smooth, flowing lines; gleaming, lustrous finish, and handsome hardware of the 11-cubic-foot International Harvester Freezer.

Snowy-white enamel inside and out... a big, full-size lid providing easy access and a full-view of the roomy interior... a smartly-designed, chromium plated handle that fits the hand comfortably, works easily, closes securely. Those are things that women who use this freezer talk about.

Here are advantages your salesmen, too, can talk about... they're features that make sales... examples of careful, skillful International Harvester designing and engineering... of product leadership that opens up bright new sales and profit opportunities for International Harvester Refrigeration dealers.

They go beyond the six basic selling

features of all International Harvester freezers:

1. Floating Lid—2. All-Steel Construction—3. Comfortable Toe-Space—4. Hermetically Sealed Unit—5. Hermetically Sealed Insulation—6. Dulux Finish over Bonderite

And remember... with a product second to none, International Harvester Refrigeration dealers have the solid backing of

- Powerful National Advertising
- Coast-to-Coast Distribution
- Effective Nationwide Service
- Great-Name Prestige

For information about open refrigeration territory, get in touch promptly with your nearest International Harvester branch.

INTERNATIONAL HARVESTER COMPANY  
180 North Michigan Avenue Chicago 1, Illinois



INTERNATIONAL HARVESTER

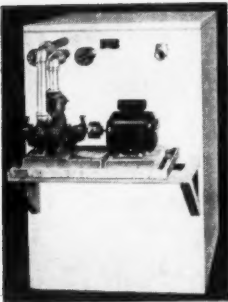
*Refrigeration*

THE INTERNATIONAL HARVESTER SYSTEM OF FOOD PRESERVATION



**Filtrine**  
HIGH EFFICIENCY

**WATER  
COOLERS  
AND  
FILTERS**



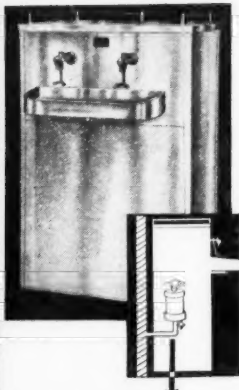
INDUSTRIAL TYPE  
34° TEMPERATURE

for  
**DRINKING WATER  
AND  
INDUSTRIAL  
PURPOSES**

**FILTRINE  
MFG. COMPANY**  
53 LEXINGTON AVE.,  
BROOKLYN 5, N.Y.

Manufacturers of  
Water Coolers &  
Filters for over  
40 Years

STAINLESS STEEL  
CAFETERIA COOLER



**FILTRINE FILTERS  
FOR  
PURE,  
SPARKLING,  
CRYSTAL-CLEAR,  
TASTE-FREE  
WATER**

## Insulation, Cooking Units Featured In New Line of Crosley Ranges

CINCINNATI—Four distinguishing basic features mark Crosley's new line of deluxe gas and electric ranges now being delivered to distributors throughout the country, according to Philip W. Pugh, newly appointed manager of range sales of the Crosley Division, Aviation Corp.

The "Basic 4," designed to save time and effort in preparation of foods, are the extra-large oven equipped with two non-tilting racks with safety stops and backguards; the waist high broiler; extra thick insulation which permits placing the range flush against walls or non-metal cabinets; and four fast surface units, which, in the electric model, includes a six quart deep-well cooker.

The new Crosley line includes a deluxe electric, and a deluxe gas model for natural, manufactured, or bottled gas.

All new Crosley ranges feature the one-piece top and waterfall porcelain front, and oven and broiler door and utility drawers with concealed hinges that fit flush to front and sides of range.

Electric ranges are equipped with a control timer and clock; top lamp which illuminates switches on backguard as well as range top; automatically controlled convenience outlet on backguard; interior oven light automatically controlled by door; combination oven thermostat and oven and broiler control switch; and an oven pilot light replaceable from front.

## By Limiting Orders to Actual Delivery Schedule, Dealer Keeps Customers Happy

DENVER—A record of 72 major appliances, all delivered following a "cash deposit" at the time of the original contact, has been rung up by Stanleigh's, Norge dealership here.

"A lot of people told us that the cash-deposit plan would not work out," Robert Wolf of the sales department, stated. "However, we think it has had a lot of advantages. Our policy is this:

"We take absolutely no registrations for appliance delivery unless the customer puts down a cash deposit, this ranging from \$10 on up, depending upon whether he intends to finance the purchase or not. If he wants to finance it, we give the customer the opportunity to pay for the appliance as if it were already in the home, paying 1/3 down and the rest over a six month's to one year period.

"In this way, often the appliance has been paid for by the time it is delivered—something customers appreciate. Many people want to pay all cash right now, against later delivery, but we discourage this, through limiting cash deposits to a set number."

The Stanleigh Appliance Store carefully allots its cash deposits against a given number of deliveries expected during the next three months. A bona-fide order is written up when an opening occurs and otherwise, customers are all on a first-come, first-served basis. There is no ill-will, of course, from customers whose names are not taken, whereas indiscriminate registration of names might easily result in disappointments.

"We take only from 10 to 15 deposits at a time, gauged against future deliveries," Mr. Wolf said. "During the latter part of last year, for example, we delivered 12 Norge refrigerators, around 38 electric ranges, and gas ranges, and some 40 washing machines, each of which was sewed up by means of a cash deposit.

"These customers, whether financing them or paying the full price upon delivery, were uniformly pleased

and surprised when we came through with them. Thus, each of our cash-deposit customers is an enthusiastic booster," by carefully limiting the number we take, figuring out exactly how many appliances we may expect, etc., we remove the possibility of an irritated, displeased customer entirely. That looks like sensible business to us."

## G.E. Maness Named Sales Head for Ohio Distributor

COLUMBUS, Ohio — George E. Maness, formerly a special city representative here for the Tracy Wells Co., local major appliance distributor, has been appointed sales director of the firm, R. C. Hager, vice president and general manager, has announced.

Mr. Maness started with Tracy Wells in 1928, working in the stock room. A year later, he started selling for the company in its Ohio and Indiana territories. He was subsequently moved to Columbus, where he assisted sporting goods, furniture, jewelry, and department stores in the promotion and sale of special merchandise.

Discharged from the Navy in 1945, Mr. Maness returned to the company as special city representative.

## Wood Manages Dixie Service

SPARTANBURG, S. C.—Walter E. Wood, Jr., who has had 18 years' experience in the electrical appliance field, is manager of the Dixie Service Co., which recently opened for business at 251 Magnolia St.

## Pair Opens New Store

LITTLE ROCK, Ark.—Thomas C. Cotter and J. E. Carroll are co-managers of the National Home & Auto Stores recently opened at 409 Center St. here.

## Denver Plumbing Firm To Sell Appliances; 'Logically Within Plumber's Scope'

DENVER—The B. K. Sweeney Co. here, appliance distributor, has announced appointment of McCarty-Johnson Plumbing & Heating Co. to retail specific lines of G-E appliances—described as "logically within the plumber's scope."

Joe McCarty, head of the firm, is blueprinting construction of a retail store which will be staffed by a crew of outside and inside salesmen, and which will specialize in complete kitchen engineering.

"For the most part, we are going

to sell those appliances which are either water or gas connected," he pointed out, "such as automatic home laundries, garbage disposal equipment, dishwashers, gas ranges, gas and electric water heaters, and in some cases refrigerators and accessory lines."

## FIRM EMPLOYS 100 PLUMBERS

Decision of the McCarty-Johnson firm, which employs over 100 plumbers, was based on the fact that the average plumber has been lax about getting into the merchandising field, and that the most logical entry into the appliance sales field was by "finishing up the job."

"We have installed hundreds of home plumbing jobs in which we ran up the connections for the gas range, for the water heaters, dishwasher, etc., ready for other dealers to hook on," Mr. McCarty explained. "It is the most natural thing in the world for the plumber to go ahead and sell the appliances which complete the installation at the same time he takes the contract for the plumbing work."

"We don't intend to compete with the general field of electrical appliance dealers—instead, we will concentrate on those appliances which are essentially a part of the plumbing or gas distribution system in the house."

## THEY'LL 'BIRD DOG' PROSPECTS

The firm will use a crew of from 80 to 100 journeymen plumbers making domestic repairs, to "bird dog" prospects. Each plumber, while on duty in the home, will check for an opening to sell such items as a water heater, electric garbage disposal machine, or dishwashing machine, and will turn these leads in to the retail sales office. In addition, when contracting new home plumbing installations, every effort will be made to sell the homeowner or builder on "making the installation complete" down to all appliances involved.

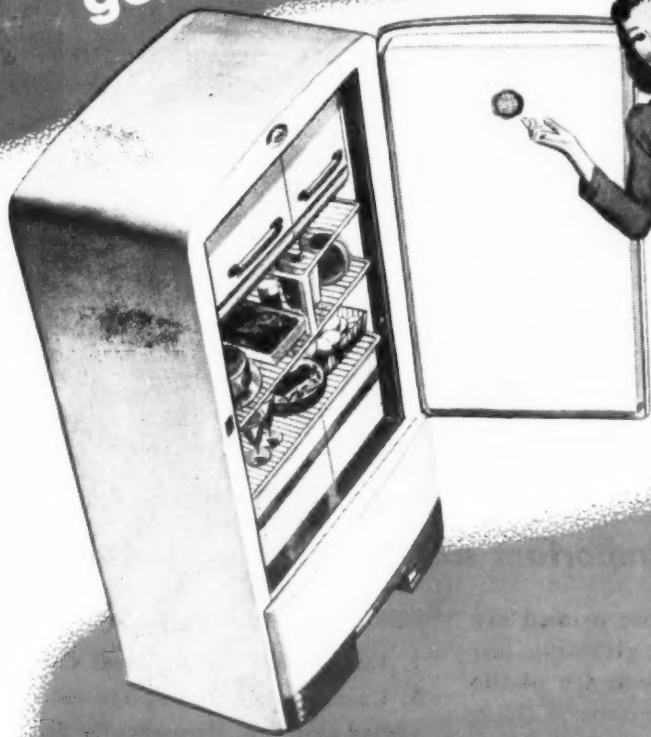
## Appliance Center Opens

NIAGARA FALLS, N. Y.—Catact Ice Co. has opened what it describes as "the most complete and the largest appliance center in Niagara Falls" at 821 Cedar Ave. The company is handling a complete line of electrical appliances in addition to air conditioning and commercial refrigeration equipment.

## Georgia Electric Established

DUBLIN, Ga.—The Georgia Electric Co. a new firm, is carrying a general line of electrical appliances and also has a repair department. Freeman O'Neal and L. B. Roberts, both formerly with the Georgia Power Co., are the owners and operators.

Takes care of  
**TOMORROW'S**  
good looks!



**BONDERIZING Preserves the Finish**

Bonderizing (as your customers have learned through years of national advertising) holds paint to metal, guards against corrosion, provides lasting fine finish protection.

Most refrigerators today are Bonderized—just as are automobiles, washing machines, ironers and scores of other products. Be sure you take full advantage of this powerful sales feature. Tell your customers, "It's Bonderized."

Today, on your showroom floor, it's a perfect finish—unbroken gleaming white. And the Bonderite® seal on the inside of the door tells your customers that this showroom finish will stay fresh and attractive through years of service.

PARKER RUST PROOF COMPANY, 2170 East Milwaukee Avenue, Detroit 11, Michigan  
\*Reg. U. S. Pat. Off.

**BONDERIZING** Holds Paint to Metal  
**PARKERIZING** Inhibits Rust  
**PARCO LUBRIZING** Retards Wear on Friction Surfaces  
**PARKER PRODUCTS CONQUER RUST**



## Gets New Executive Post 50,000 Shares Offered To Raise Capital For Refrigeration Cargoes, Inc.



HAROLD E. TIPPETT

### Hajoca Appoints Tippet Refrigeration Div. Head

PHILADELPHIA—Harold E. Tippet has been named manager of the newly formed refrigeration division of the Hajoca Corp. here, W. A. Brecht, president of the corporation, announced recently.

Mr. Tippet, who has been with the corporation for 27 years, will announce the opening of branches to serve the refrigeration field in the near future.

### Tramposh Elected Chairman Of Midwest R. E. W. A.

KANSAS CITY, Mo. — E. L. Tramposh of Refrigeration Equipment Co. here was elected chairman of the Midwest Refrigeration Equipment Wholesalers Association at the Association's recent meeting here.

Other officers elected are: Frank Pond, vice chairman; L. W. Krueger, secretary; and Joe Bickel, treasurer.

## Roche & Hull Opens New Quarters In Baltimore

BALTIMORE—Roche & Hull, Inc., wholesaler of parts and supplies for air conditioning and refrigeration, has moved into new and larger quarters at 1107 Maryland Ave. here, announces George J. Roche, president of the firm.

The new quarters were occupied on Feb. 3, but a "formal opening" is scheduled for Thursday, Feb. 20, he adds.

## Paul Shapiro Purchases Superior Refrigeration Supply

KANSAS CITY, Mo.—Paul Shapiro, formerly a partner in the business of Superior Refrigeration Supply here, has purchased the entire business and now operates it as owner.

Mr. Shapiro said that the business is being carried on as before with the same personnel and the same direct management in charge.

## Scarce Equipment Holds Back Air Conditioning for Hatchery

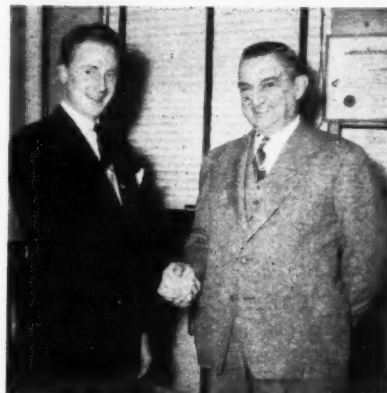
SCHUYLER, Neb.—An air conditioned hatchery will make its appearance as soon as mechanical equipment can be secured, according to Lester Oberg, general manager of the Oberg Hatchery here, which has just completed a new building of white tile construction, with air conditioning vents built in.

The building, which is said to be one of the most up-to-date hatcheries in the entire country, covers a quarter of a block, and houses incubators, poultry equipment, cream room, egg and poultry buying areas and feed space.

## New Refrigeration, Appliance Business Started In Burbank

BURBANK, Calif.—Midway Refrigeration & Appliance Co. is the firm name under which Claude Culver and Edward Flood have published a certificate that they are conducting business in Burbank.

## Handing Over the Reins



JACK GLASS of Chase Refrigeration Co., retiring chairman of the Central Refrigeration Wholesalers Association, congratulates the group's new chairman, LEE KEELEY of Airo Supply Co. Officers who will serve under Mr. Keeley are: R. M. Potter of U. S. Electric Co., vice chairman; Irving Alter of Harry Alter Co., treasurer; and Pat Ravanesi of Service Parts Co., secretary.

# "DETROIT" gas charging principle

proved by *Years* of service

Years of service in many thousands of installations have proved the value of the "Detroit" Gas Charging principle.

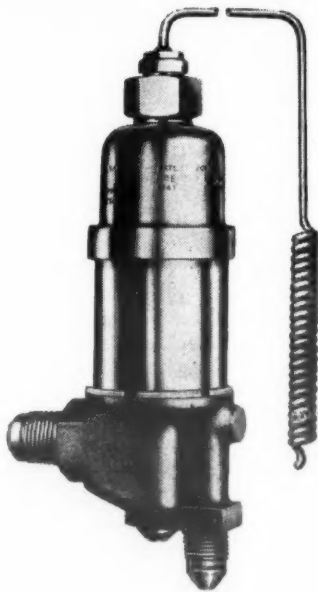
"Detroit" pioneered gas charging thirteen years ago. Now, nearly all manufacturers of expansion valves

have adopted gas charging, at least in principle. It is the accepted standard.

Gas charging puts a definite limit on maximum operating pressure—guards against motor overload. Gas charged valves balance the system more quickly when starting up, insuring fast, positive action.

"Detroit" Valves are gas charged . . . one reason for their wide popularity.

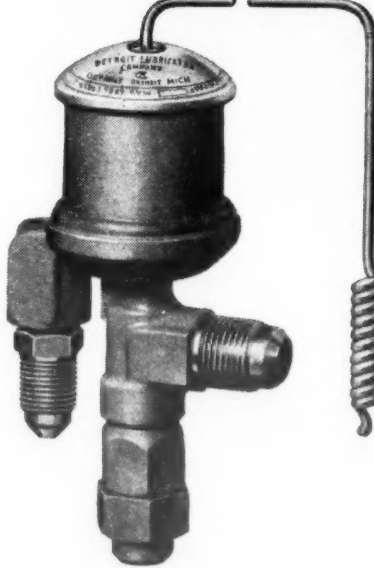
No. 673



"THE STANDARD OF THE REFRIGERATION INDUSTRY"

"Detroit" No. 673 has a long record of dependable performance in a wide variety of installations, and has been, for many years, "the standard of the refrigeration industry". Designed for average size commercial and air conditioning installations. Sensitive and accurate in operation—gas charged for instant response and reduction of motor load during pull-down cycle. Duraflex bellows and Delubaloy needles and seats resist corrosion and assure long life.

No. 573



THE SAME SUPERIOR PERFORMANCE AS THE NO. 673 FOR SMALLER INSTALLATIONS

The "Detroit" No. 573 has been produced in response to a demand for a valve for smaller installations which would have the performance of the "Detroit" No. 673.

No. 573 has the same operating characteristics—the same dependability and adaptability as the 673. Designed for small commercial installations, its double diaphragm construction with gas charged power element permits close superheat control at low suction pressures and provides motor overload protection in its simplest, most effective form, using only one power element.

UNIT NUMBERS OF No. 673 VALVE

Use "Detroit" Unit Numbers when ordering these stock items from your "Detroit" Wholesaler.

Unit No.	Refrigerant	Max. Pressure	Connections
6731968	Freon-12	15	Inlet: 3/8" SAE for 3/8" x 1/4" Reducing Nut. Outlet: 1/2" SAE
6731428	Freon-12	55	
6731563	Methyl	10	
6731411	Methyl	40	

Rated at 1-ton Freon-12 or 2-ton Methyl.

UNIT NUMBERS OF No. 573 VALVE

Use "Detroit" Unit Numbers when ordering these stock items from your "Detroit" Wholesaler.

Unit No.	Refrigerant	Max. Pressure	Connections
57300	Freon-12	45	Inlet: 3/8" SAE for 3/8" x 1/4" Reducing Nut. Outlet: 1/2" SAE for 1/2" x 3/8" Reducing Nut.
57309	Freon-12	10	
57311	Methyl	35	
57315	Methyl	5	

Rated at 1/2-ton Freon-12 or .9-ton Methyl.

It's a  
**REVELATION**  
—that's all!



- ★ Exclusive Dealer Franchise
- ★ Now in quantity production
- ★ All sizes: Industrial and Commercial
- ★ The last word in...

**ELECTRIC  
WATER  
COOLERS**

Revelation Company  
Division of  
Interstate Engineering Corporation  
2600 Imperial Highway  
El Segundo, California

**DETROIT LUBRICATOR COMPANY**



General Offices: 5900 TRUMBULL AVENUE, DETROIT 8, MICHIGAN

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

"Detroit" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • "Detroit" Expansion Valves and Refrigeration Accessories • Stationary and Locomotive Lubricators





Take your shelving and basket problems to Union Steel Products Co. You'll cut costs, save time, and trouble, save money... while adding to your product's sales-appeal.

You'll do this because Union Steel has the experience and facilities to give you shelves and baskets that are right... in the quantities needed to meet your production schedule... at prices that will lower your production costs.

Whether you want the life-time mirror-like beauty of Stainless Steel... or the economy, long life and high lustre of Plated Finish shelves or baskets, Union Steel can supply them to you.

Write today for detailed information.

**UNION STEEL PRODUCTS CO.**

531 Berrien Street • Albion, Michigan

## 18 Years In Field, Opens New Store

ATLANTA — Bob Shelley, 18-year appliance veteran, has opened Bob Shelley Appliances, 273 Peachtree St. here. A native of Alabama, Mr. Shelley is president of the Atlanta Electrical Association and vice president of the Retail Merchants Association. His firm will handle G-E and Philco refrigerators, a long list of radios, and other appliances.

## Whidden Chartered

JONESBORO, Ark.—Whidden Appliance Co., Inc., here has been granted a charter to deal in household appliances, etc. The authorized capital stock is \$25,000 with \$6,000 paid in. The incorporators include: John Whidden, Jr., Hoyt T. Purvis, and Margaret Sue Purvis Whidden.

## Partners Separate

PATERSON, N. J.—Benjamin T. Ellis, Hawthorne, filed business name to trade as Arctic Refrigeration & Service Co., 530 Madison Ave. Dissolution filed by Mr. Ellis and Joseph B. Steglik, for same company left the former as sole partner.

## Steinbergs Start

PASADENA, Calif.—Economy Refrigeration & Home Appliances Sales & Service is the firm name under which Harry Steinberg and Phillip Steinberg have published a certificate that they are conducting business at 201 N. Fair Oaks Ave.

## Sky-Writing an Appliance Sale



The three partners in a flying Frigidaire dealership check over the flight schedule for the coming week. In usual order, William A. Butler, Howard Evans, and W. F. Butler, are seen in front of their two-passenger, single-engine, spin-proof airplane. They find many Ohio customers want to buy appliances when a plane ride is included.

## Dealer Uses Airplane Tie-in To Sweep Customers Off Their Feet (and Ground)

URBANA, Ohio—Buy a refrigerator or an electric range and get a 25-minute airplane ride free, including a flight over your own backyard.

That is the bargain offered customers of the Butler & Evans Appliance store here—a bargain that has brought the dollars rolling into the cash till, the owners report.

Purchasers of other appliances in amounts greater than \$25 also get free airplane rides, flying time being determined by the amount of the purchase.

W. F. Butler and Howard Evans, partners in the appliance business, a Frigidaire dealership, got the idea of offering free rides with appliance purchases of more than \$25 last summer. Both are licensed pilots of several years standing.

They acquired a sleek two-passenger, single-engine, spin-proof airplane and then they put their idea to the test.

At first they passed the "free ride" idea around by word of mouth to see what interest would be aroused. The response turned out to be definitely gratifying.

### IDEA PUT TO TEST

They had so many people waiting for rides that they had to print tickets. These tickets were given away with every \$25 purchase. The buyer could either use the ticket himself or give it to a friend if he so desired.

Holders of the tickets had only to present them to one of the partners on a week-end with favorable weather to collect their rides.

Mr. Butler estimated that more than 600 customers have collected free rides since the flights have been offered.

"I've taken up everyone from the

town laundress to the bank president," he declared.

As a further advertisement for their appliance business, Messrs. Butler and Evans take their plane to fairs, festivals, and other public events. At a recent fair, they offered a 200 mile ride as first prize in a contest and a 100 mile ride as second prize. The winners were permitted to select their own destination. All expenses were paid.

### HERE'S THE WAY HE DOES IT

Mr. Butler explains his merchandising technique this way:

"We're expecting to do business in Urbana for a long time to come. Appliance sales will not always be as simple as they are now. When the transition of business from a sellers' market to a buyers' market is complete, and old-fashioned competition turns the corner, appliance sales will become increasingly difficult—we want to be on the ground floor. We're flying to this goal."

Mr. Butler's son, William A. Butler, a third member of the firm, is now taking flying instructions, and will soon be able to help keep the Butler and Evans appliance business up in "the wild, blue yonder."

## Wesco Branch In Little Rock Formally Opens New Building

LITTLE ROCK, Ark.—Formal opening of the new building for Westinghouse Electrical Supply Co., 118 Sherman St., was held recently and guests included W. B. Meek of New York, assistant manager for Westinghouse and E. J. Schaubert of St. Louis, district manager. J. A. Hunter is local manager.

## To the Manufacturer

Sales and Sales Promotion is Our Business. We represent you to the Refrigerator Distributor and Dealer, Ice Cream Mfrs., Frozen Food Distributors, Chain Stores, Kitchen, Restaurant, and Hotel Supply Houses.

Our sales and service staff are experienced field men, they cooperate and train dealer salesmen.

We sell to Wholesalers Only.

We are interested in Commercial Refrigerators and its kindred lines.

We have offices in Philadelphia, New York, Buffalo and Boston.

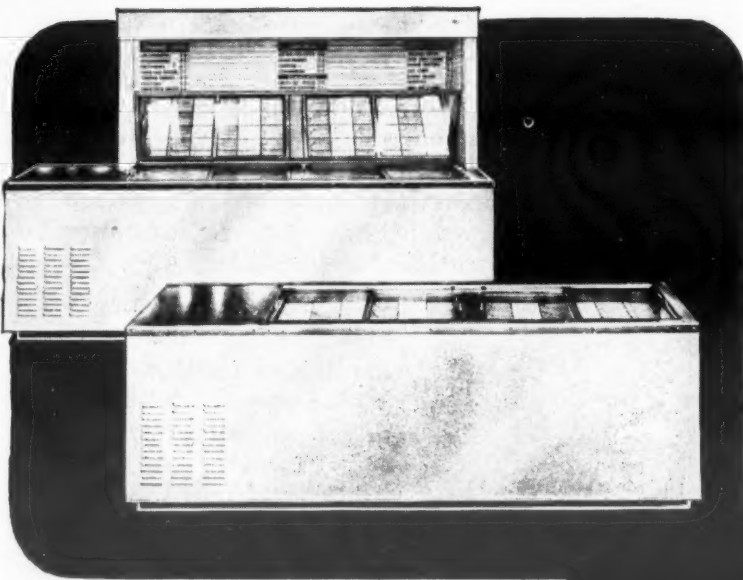
You may write us in strict confidence for further details. Financial and trade references gladly supplied.

BOX 2239

Air Conditioning & Refrigeration News

**FLEISCHMAN**

## FROZEN FOOD DISPLAY CABINETS



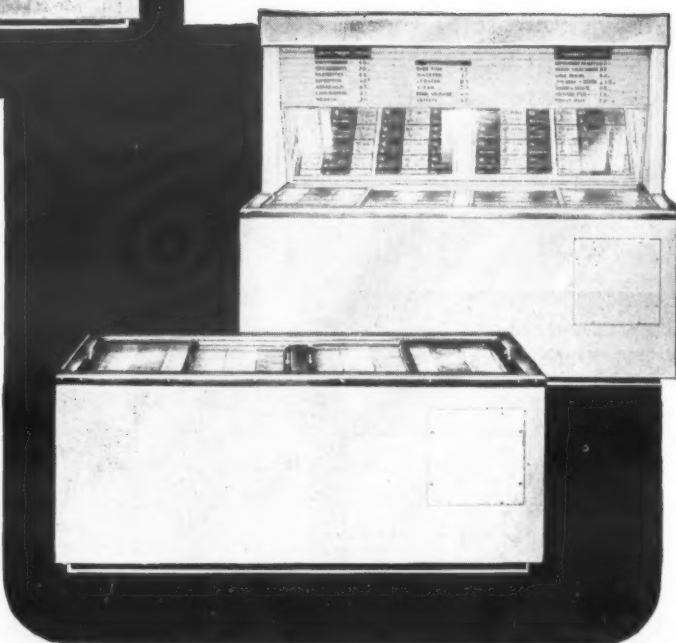
Model 520A self contained with, without superstructure

- All steel welded construction
- Hydrocleaned Insulation
- 4 Easy sliding glass doors
- 20 Cubic feet

- Smartly styled
- Economical to operate
- Immediate delivery

Franchises in Several Territories

Still Available



Model 520 remote cabinet, with, without superstructure

**Fleischman Freezer Co.**

275 East 140th Street

Bronx 51, N.Y.





## OFF THE CHEST

### DESCRIBES NEEDED TYPE OF FROZEN FOOD CASE

Morton Show Case Co.  
Dayton, Ohio

Editor:  
Will you kindly place this letter in some prominent place in your publication, so that freezer or frozen food cabinet manufacturers will get wise to themselves as to what the market wants?

There is a tremendous demand for an open type frozen food case with bottom storage, two or three doors. Practically every manufacturer in the nation, with one or two exceptions, is making just a chest model with some sliding door arrangement.

But what is wanted is a box with a menu board attached with a mirror reflecting the merchandise, no lids of any kind, but a bottom door storage. There is a national demand for this product and we can't buy it.

To make a frozen food cabinet just like an ice cream cabinet and take off the lids is a bunch of poppycock. The industry certainly has engineers with more brains than this. Let's get wise and give the merchant something that he needs, a place to display merchandise and storage space in the bottom for the surplus.

Could anything be more simple? Let's have some fixtures. The war is over. Let's not turn back the pages of time 20 years.

E. G. SANDERS,  
President

### ASKS LABOR-CAPITAL JOIN TO FIGHT GOV'T WASTE

7931 Drexel Avenue  
Chicago, Illinois

Editor:  
I do not remember reading the editorials on "What's the Matter with America?" or "Roosevelt's Legacies to the American People." If it is not inconvenient, I would like to have them.

As far as labor is concerned, I think they are in the same boat as the rest of the people. They are not thinking. I believe they both, with capital and the manufacturers, should get together and run politics, as we know it, out of gas. That is, if the amount of money that is deducted from wages on account of waste in Washington was returned to the worker, he would not need a raise.

I think both labor and capital are wrong fighting each other, but should band together and put some honest men in Washington.

COURTNEY C. KEMPH

### ON-THE-JOB TRAINEE RESENTS 'LOAFER' LABEL

Appliance Service Co.  
3649 Collins Way  
Hollidays Cove, W. Va.

Editor:  
In your Jan. 20 issue of the NEWS, you published a letter contributed by J. H. Irvine of Miami, Fla. It seems that this certain individual seems to believe that the real cause for low productivity in our factories and the manpower shortage is due to the fact that the returned veterans are comfortably loafing in schools, colleges, and on-the-job training rackets.

In my opinion, this is a very foolish statement for a department head to make. The daily newspaper usually has a few articles concerning the progress of the veterans in schools and colleges and the statistics show that the veteran is doing far better than the ordinary civilian student.

Perhaps Mr. Irvine knows of a particular on-the-job training case that appears to be a racket. If I knew of that one case, I probably would agree. But it is completely unjust to deny the other veterans the

chance to prove their ability and initiative.

I am a veteran and feel quite capable of discussing this subject. I wanted to learn refrigeration. I attended a trade school for a number of months and then applied for various jobs. I could not qualify because, as you know, every employer requires several years of experience. Just where is a young and energetic man going to obtain this experience? On-the-job training was the answer for me and will be for other veterans who are sincerely interested in learning a trade.

Numerous individuals cloud the public mind by expressing their opinions while lacking enough information and ability to discuss subjects in regard to the returned vet-

eran. The majority, as in Mr. Irvine's case rely upon their position in the business world for recognition.

GEORGE J. CHARNIE,  
On-the-job Trainee

### DATA ON AIR RECOVERY

MAW Electric Co.  
Grayville, Ill.

Feb. 5, 1947

Editor:

In the Jan. 20 issue of AIR CONDITIONING & REFRIGERATION NEWS I read a very interesting article on page 8 by Henry Sleik, vice president of W. B. Connor Engineering Corp. about the recovery of air by use of activated carbon panels. I would appreciate your assistance in secur-

ing additional information on this subject.

I certainly enjoy reading your NEWS and believe it to be the most complete and helpful publication available anywhere.

MALCOLM A. WILLIAMS,  
Manager

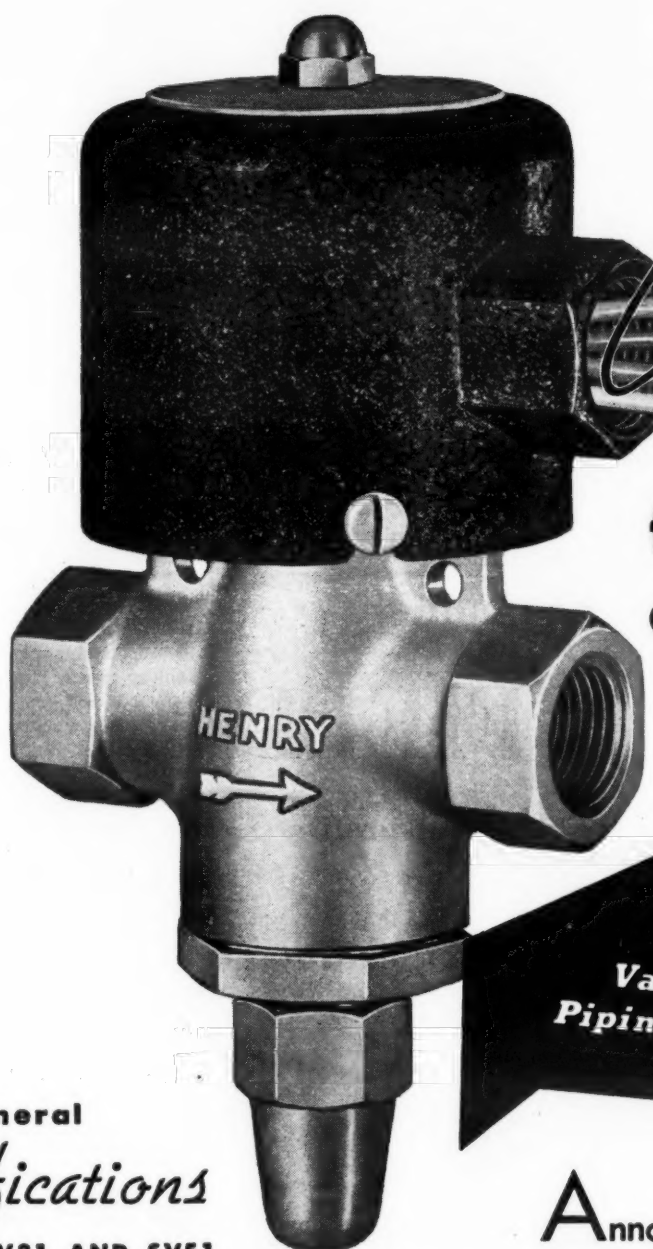
### TIMELY MESSAGE

Stewart, Hanford & Casler, Inc.  
c/o Williams Oil-O-Matic  
Bloomington, Ill.

Editor:

Your editorial in your Jan. 6 issue is, indeed, a timely message. Congratulations on the forceful manner in which you put the printed word to work.

JOHN CULLINAN



*Designed...*

**for longer life  
and easier service**

*New* Types SV31 and SV51  
Henry Solenoid Valves Can Be  
Serviced from the Bottom of  
Valve Body Without Disturbing  
Piping or Electrical Connections

### general Specifications

FOR TYPES SV31 AND SV51

For Freon, Methyl Chloride, Water,  
Air, Oil, Gas, Etc.

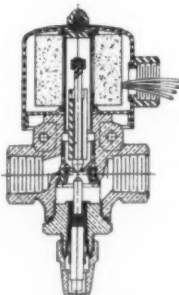
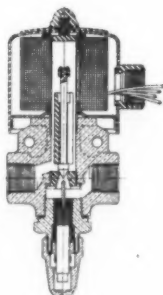
1. Easy-to-service come-apart construction with access to all internal parts from bottom of valve.
2. Removable seats.
3. Manually operated stem for emergency use.
4. Valve body made of dense bronze casting. Silver brazed joints.
5. Stainless steel internal parts.
6. Securely fastened coil housing prevents strain on top of plunger enclosing tube.
7. 4 position coil housing through 360°.
8. Triple impregnated coils, moisture repellent, low current consumption. Flamenol lead wires.
9. Two mounting holes permit mounting from either side of valves.
10. Standard Voltages 115/60 and 230/60 A.C. Dual voltage coil.

Announcements from time to time of additional new Henry Solenoid Valves will convince you of this fact: True to the Henry tradition of always building a better product, the Henry line of Solenoid Valves today leads in design features. Typical examples are the three and five ton, SV31 and SV51, which have come-apart construction. For the first time small valves of this type now have the optional feature of a manual stem lift for emergency operation. Why not check Henry specifications before you buy. Ask your jobber for details.

### individual specifications

#### TYPE SV31

Nominal Capacity  
3 Tons Liquid Freon  
Two piece impact  
plunger with direct  
acting metal-to-  
metal seat.



#### TYPE SV51

Nominal Capacity 5 Tons Liquid Freon

Two piece impact plunger operates pilot port in piston. Molded synthetic ring provides soft seat at main port for piston. Seating qualities, therefore, are superior to conventional construction.

### PRICES REDUCED

Up to 20%

- Reach-Ins—self-contained 25-40-60-80 Cu. Ft.
- Beverage Coolers—Remote—Self-Contained
- Electric Water Coolers
- Freezers 6 to 75 Cu. Ft. Clearview-Slide Tops
- Reach-In Type Freezers
- Home-Farm Freezers
- Blower Coils (Pat. Pend.)
- Freezer Plates (Pat. Pend.)
- Condensing Units 1/4 H.P. to 3 H.P.
- Walk-In Coolers All Steel
- Electric Meat Slicers
- Electric Meat Choppers
- Porcelain Meat Cases

PROMPT SHIPMENTS

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903 Temple St.  
Los Angeles 12, Calif.  
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**HENRY VALVE COMPANY**

Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications

3260 W. GRAND AVENUE • CHICAGO 51, ILLINOIS

Cable: HEVALCO CHICAGO





## Nebraska Locker Men Agree Trend In '47 Is To Improve Merchandising, Services

### B. J. Robinson Named Head at 7th Annual Convention

OMAHA, Neb.—The biggest target to be aimed for during the new year is to give patrons better service, agreed members of the Nebraska Frozen Food Locker Association at the seventh annual convention at the Fontenelle hotel here.

B. J. Robinson of Albion was elevated from vice president to president of the association, succeeding Leonard Hammang of Fremont.

Standardized operations, greater knowledge of foods for better advice to patrons, and possibly delivery service, were cited as steps to be taken in increasing service. Meat, which flowed into lockers during the rationing period, still is 75% of the industry's business, and to handle that properly locker men must know about slaughtering and custom cutting, and vapor-proof packaging, it was declared by Albert Guggedahl,

Des Moines, Iowa, secretary of the National Frozen Food Locker Association.

The Nebraska operators reported that the war period boom is still holding, and a number of plant owners in the state are expanding operations. Mr. Guggedahl pointed out that better insulation and improved equipment are more universal in the industry.

President E. G. Spencer of the National Frozen Food Locker Association, stated that the trend is toward more merchandising by city plants and toward offering greater service by rural plants. The industry he described as being in a settling-down process after a period of rapid growth.

He reminded association members that it is a comparatively new industry, having been born in depression

years, and also reminded that the impression the industry is a "gold mine" is false, as some of the 2,500 locker operators in 33 states who are association members have been losing money on narrow profit margins.

Most locker men are raising processing or rental charges to combat higher operating costs, and some operators are raising both, he said. He believes that a 25% rise is in order.

Other speakers included Arthur Dunham, C. E. Moen of Sioux Falls, S. D., and E. G. Squires of Shenandoah, Iowa.

Officers elected besides the new president were Lester Sollenberger of Fairbury, vice president; W. H. Hasebroock of West Point, re-elected secretary-treasurer; Boyd Jones of Pilger, John Therien of Lincoln, and J. L. Ellenberg of Lyons, new directors. Mr. Hasebroock also is treasurer of the national association.

Re-named as directors were Lawrence James of York, C. W. Warnke of David City, Roy G. Myers of Falls City, R. A. Reid of David City, while Mr. Hammang also becomes a member of the board as retiring president.

## Operator Beats Building Shortage by Converting Barn Into 500-Unit Plant

BOLIVAR, Mo. — Shortages of building materials plus lack of suitable building space, forced A. V. Williams to convert an old sales barn for his use as a locker plant, in Bolivar, a town of 2,500 population in the heart of the Missouri Ozark country.

The barn was a two-story, red brick structure, which was in extremely poor repair. Mr. Williams replaced the large center door of the barn with a regular sized entrance door flanked by glass sidelights. Two large show windows replaced the unsightly old fashioned windows of the first floor. An overall gleaming appearance was achieved by covering the entire face of the structure with white stucco. Second floor windows were completely eliminated, adding to the general trimness of the building.

Customers are not misled by the exterior of the building, for the interior presents the same spotlessly clean white finish. The 500 lockers of the plant were installed by the Phillips Co., Columbia, Mo., using York refrigeration equipment.

Indicative of the cooperative spirit of locker operators, Mr. Williams states that he has received untold help and advice from neighboring plant operators since his opening in March, 1946. Two neighboring Ozark plants which he named specifically are Frigid Food Lockers, Versailles, Mo., and Cooper's Locker Plant, Warsaw, Mo.

Mr. Williams conversion of a barn into a locker plant is another example that persons interested in entering the locker plant business need not build an entirely new building for this purpose.

### New Arrangement Permits Wyoming Operator To Sell Meat for Packing Firm

CASPER, Wyo. — Frozen Food Lockers, Inc., 5th and Beech Sts., has made arrangements with the Squaw Creek Livestock Processing Co., of Casper, whereby the locker plant will serve as a retail outlet for the packing house firm's beef, pork, mutton, and lamb. It will not be necessary for patrons to have their lockers at the Frozen Food plant.

The merchandising arrangement will be promoted especially for housewives and persons who are particular about their meat, according to the locker plant management. Patrons will be able to pick out a whole or part of any type carcass. After the customer's inspection and choice of meat, he may have the meat cut that he desires as well as witnessing the operation, if he chooses. Dave Leonhardt of the packing plant will manage the sale, cutting and curing of the various products.

Hams, bacon, loins, and shoulder will be cured to order, while pork fat and trimmings will be rendered according to the patron's instructions. Precooked hams also will be available at the locker plant.

### CPA Approves \$16,250 Locker Plant Construction

WASHINGTON, D. C.—The Civilian Production Administration, in approvals for non-housing construction granted the week ending Jan. 23, approved a frozen food locker plant costing \$16,250 at Shively, Ky., and a building for the sale and storage of electrical appliances costing \$2,000 at Kansas City, Mo.

Shively Frigid Lockers made the application for the locker plant, while M. G. Milens & Sons requested permission for the appliance building.

### Locker Plant Set for Texas

BEEVILLE, Tex.—L. R. Hollingsworth plans construction of 500-locker frozen food plant with sharp freeze room, commercial storage room, bulk storage room, lard-rendering room, department for processing pork, and room for storage of game.

### Locker Plant Gets CPA O.K.

CHEYENNE, Wyo. — Non-housing construction approved by the Civilian Production Administration recently in Wyoming includes a \$6,000 cold storage warehouse, shipping room, and garage for the Jack Frost Locker system of Cheyenne.

# OPPORTUNITY!

Refrigeration Engineers and Refrigeration Contractors Will Find the Widely Expanding

## LOCKER PLANT FIELD

will offer an outstanding opportunity for sales and profits

The locker plant industry is new and vigorous.  
There is a steady demand for

Building Construction      Refrigeration Equipment  
Slaughtering Equipment      Meat Processing Equipment  
Tools, Meat Handling Equipment  
and Operating Supplies

The Koch Butchers' Supply Company has pioneered in this vast field. We design and manufacture equipment exactly suited to this industry.

Koch offers a complete service, providing not only an extensive line of equipment for slaughtering and meat processing, but also by furnishing Koch Distributors, without cost or obligation, a designing and advisory service, which puts the small locker plant operator on the technical level of a meat packer.

### GET THIS PROFITABLE BUSINESS

There is room in this wonderful country of ours for more distributors of Koch Locker Plant Equipment; for progressive, aggressive engineers who possess the vision to grasp the opportunity knocking at their doors.

MORE THAN 10,000 COMPLETE NEW LOCKER PLANTS  
WILL BE NEEDED IN THE NEXT FEW YEARS.

These are in addition to the 9,000 prosperous locker plants that are already in operation, many of which will expand.

WRITE TODAY FOR THE BIG NEW 1947 KOCH SUPPLY  
CATALOG. FIND OUT WHAT THE TOP SUPPLIER  
OF THE LOCKER INDUSTRY CAN DO FOR YOU!

**K O C H**  
**BUTCHERS' SUPPLY CO.**  
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**POSITIVE AIR CIRCULATION . . . Centrifugal  
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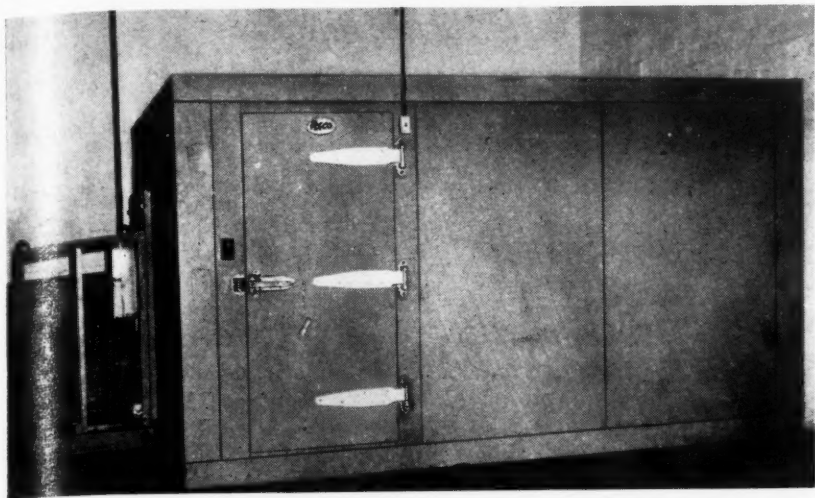
**MADE IN 2 SIZES . . . To balance 1/4 and  
1/3 H.P. Compressors—Performance Plus!**

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**BETZ CORPORATION**  
HAMMOND, INDIANA



### Part of 'Reco-Fab's' Cooler Line



Part of the line being turned out by the Refrigeration Engineering Corp. of Philadelphia, this "Reco-Fab" refrigeration system was recently installed in the Francis Edwards Ice Cream Co., Yonkers, N. Y.

## Refrigeration Engineering Corp. Attains Full Output on Prefabricated Walk-Ins

PHILADELPHIA — Refrigeration Engineering Corp. here announces that it is now in full production on sectional, prefabricated low and medium temperature walk-in coolers patterned after those built for the U. S. Army and Navy.

Packaged refrigeration systems, specially designed for use in conjunction with the coolers, will be available shortly, the company said. At present, standard Army-Navy packaged systems are being furnished.

Marketed under the brand name "Reco-Fab," the steel-clad coolers are said to maintain constant temperatures "under the most rigorous climatic conditions." They are described

and, it is claimed, "on-the-spot erection is a relatively simple task." All necessary bolts are mounted in place on each panel, and door panels are shipped with all hardware in place.

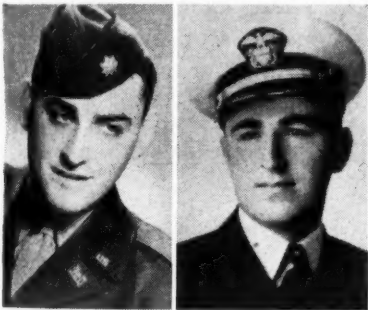
Joints are designed to be completely leak proof. Rigid specifications are said to provide that "the insulation in a section which is free dropped a distance of 6 in. onto a rigid surface 50 times shall settle no more than 1/2 in. at any point within the panel."

Interior light and floor racks are supplied at no additional charge, the firm states.

The coolers are produced in an assembly-line plant in four sizes, the largest of which is 12 ft. 10 in. wide x 7 ft. 6 in. high x 32 ft. long. Standard sizes can be varied to meet individual requirements by addition of standard panels 46 in. in width.

The packaged refrigeration systems, it is reported, will produce either low or medium temperatures, and will be equipped with a new automatic defrost device. They are to be shipped completely assembled and need only be inserted in the cooler and connected to the electric service line.

Officers of Refrigeration Engineering are Andrew J. Asch, Jr., and Edward M. Siegel, who were president and treasurer respectively of Associated Refrigerator Plant, Inc., prior to their entry into the Service.



Andrew J. Asch, Jr. Edward M. Siegel

as "unique in that they are of rugged construction, insulated with 6 in. of Fiberglas, and so engineered and constructed that they can be moved or enlarged with a minimum of effort and expense."

The standard door, according to the company, may be placed anywhere around the box, opening either to the left or right. Insulated partition sections to divide the coolers into two or more compartments, can be furnished, as can extra door panels for each compartment.

Complete assembly drawings and instructions, as well as an assembly tool, are provided with each cooler.



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Glass Top Model—

• Complete Refrigerator Supply •

92 - 7th Ave., New York 11, N. Y.



## 43rd Annual ASRE Meeting Planned for Atlantic City

NEW YORK CITY — Forty-third annual meeting of the American Society of Refrigerating Engineers will be held in Atlantic City, N. J., early in December, announces President R. H. Money, who adds that the 1948 spring meeting will probably be at the New Ocean House in Swampscott, Mass., in June, 1948.

This year's spring meeting, as previously announced, will be held in Los Angeles June 8 to 11.

## Wyoming Record Store Features 3 Air Conditioned Booths

CHEYENNE, Wyo. — Air conditioned, sound proof booths equipped with Magnavox amplification systems, are features of the recently remodeled phonograph record store of the Charles E. Wells Music Co., 114 West 18th St. The store is said to be the finest and most modern in Wyoming, with the only three year-round air conditioned booths in the state.

## Power Group Asks All Nebraska Farms Be Electrified by 1952

LINCOLN, Neb. — The Nebraska Association of Rural Public Power Districts in annual meeting here, adopted a resolution asking the Nebraska delegation in Congress to "vote for sufficient appropriations to enable all Nebraska farms to be electrified within the next five years."

## THOUGHTS FOR MERCHANDISERS



You've poured time, trouble and money into building a loyal trade of profitable customers. Don't let a single one slip away because he's down on the service your equipment renders. Nothing contributes more to the service value of your products than dependable refrigeration units. And, for many years, the "buy-word" for dependable refrigeration has been BRUNNER condensing units. When you stop to think that one good customer is worth much more to you each year than the cost of a BRUNNER unit, you can see the wisdom of equipping with the best.

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AIR AND WATER COOLED MODELS  
1/4 HP. TO 25 HP.

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SINCE 1906

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A quick check-up will show you why OASIS leads in features for every type of water-cooler user — whether you demand thirst-quenching performance, drinking ease, dependable low-maintenance operation, or streamlined, compact beauty that adds eye-appeal to any surrounding. These facts are backed by EBCO'S 20 years of leadership in water cooler design and construction. Write today for bulletin 293.

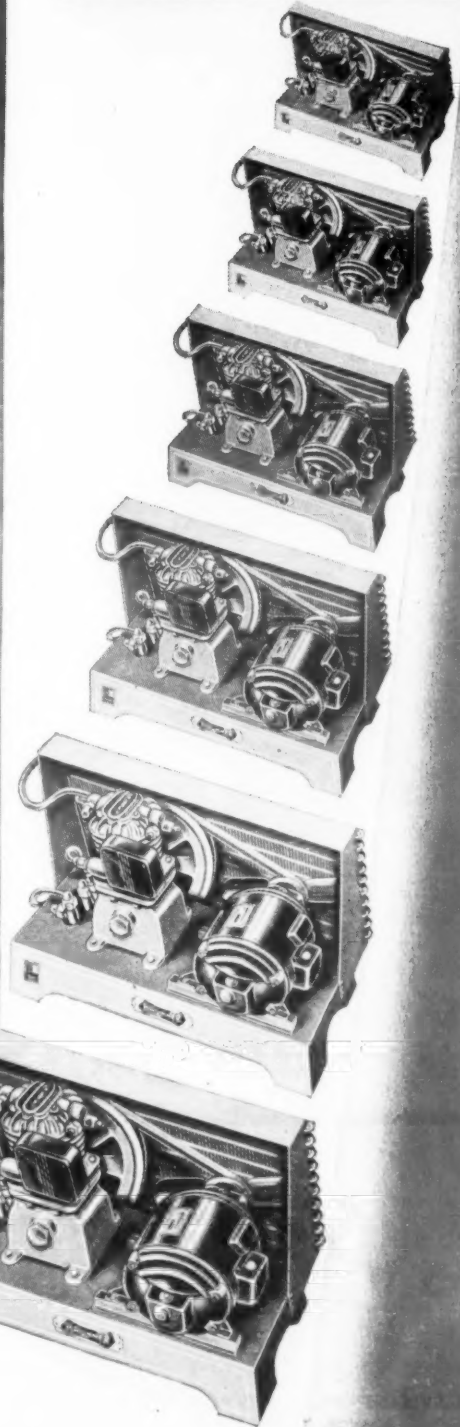
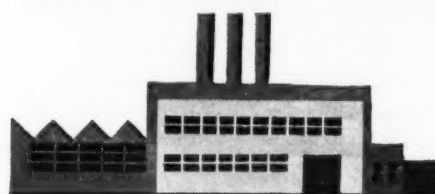


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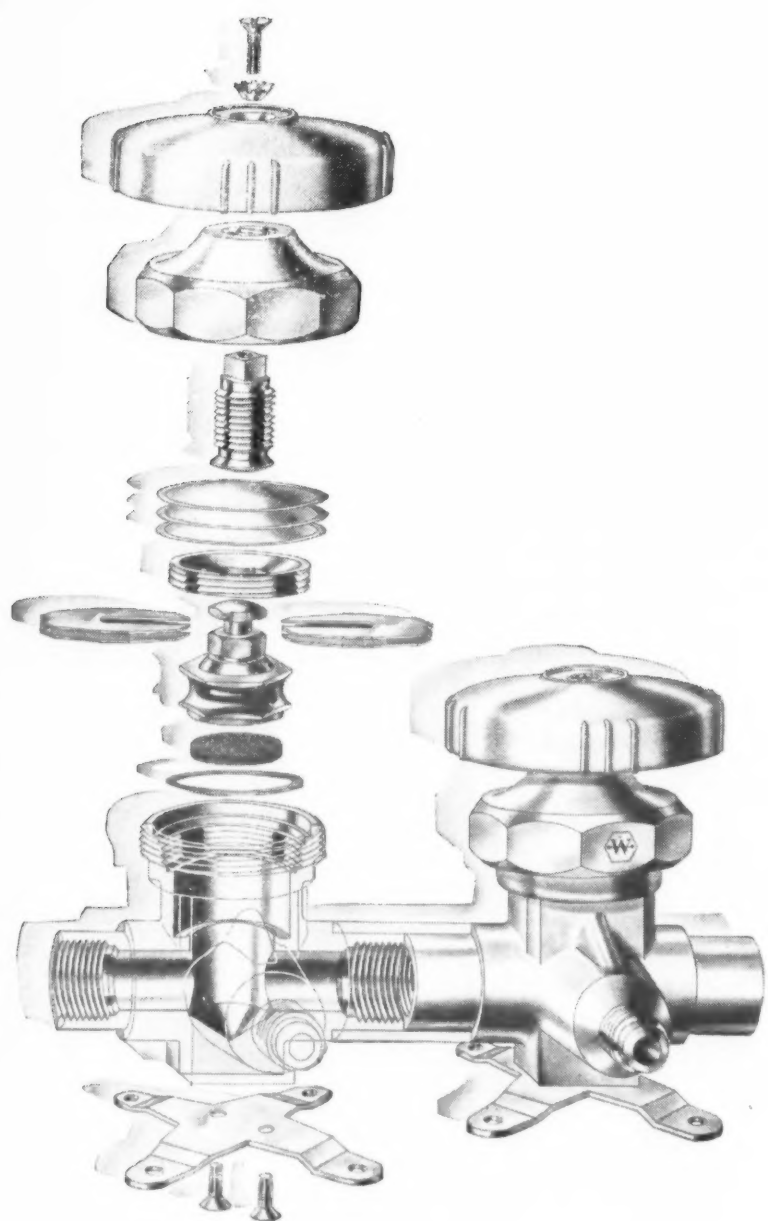


## They'll Do It Every Time . . . . By Jimmy Hatlo



**Out With Special Privileges -- Revise the Wagner Act!**

## An easy way to make Manifold Assemblies



**Y**OU can make a Weatherhead Manifold Assembly with any desired number of outlets to meet your individual requirements by using combinations of two and three valve manifolds joined by close threaded brass nipples.

Weatherhead solder type Three-Way Simplicity Packless Valves are ideal for this purpose. When combined in manifold assemblies, these fine, precision made valves provide, as nearly as possible, one piece construction. The joint where the valve is usually soldered into the manifold tube is eliminated and a more compact manifold is obtained with lower overall height.

Write for your copy of the new refrigeration catalog. It describes and illustrates the Weatherhead line of valves, dehydrators, strainers, manifold assemblies, accessories, fittings.

Look Ahead with

# Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO



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**AIR CONDITIONING AND REFRIGERATION News**

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VOLUME 50, No. 7, SERIAL No. 935, FEBRUARY 17, 1947

## Refrigeration and Frozen Foods Are Entering A Bull Market

**P**EOPLE are never satisfied. Being human, they aren't happy unless they can gripe.

Right now, men who are engaged in the refrigeration, air conditioning, and home appliance industries are trying to catch up with a backlog of orders for their products which is so big that it scares some, bothers others, and has even paralyzed a few. You'd think they'd feel good about this.

On the contrary, they're griping.

"There'll come a day," they warn, "when our mounting production rate will cross the declining curve of demand. Then we'll have to fish or cut bait, because we won't know what to do with our excess capacity."

Nuts!

And phooey!

It's doubtful that, in the lifetime of any young man who has cast his lot with our related industries, he'll have to pull in his belt. Our present prospects are amazing in themselves. BUT our future...wow!

New uses for commercial and industrial refrigeration alone can account for a 60% rise in this healthy industry's volume during the next five years.

And, as for new home appliances which best can be sold through refrigeration dealers...hey! The sky's the limit. Give these specialty dealers some new specialty products, and they'll make the daring manufacturers of these items rich!

For example:

Optimistic specialty merchandisers are looking carefully, long, and excitedly at the most fabulously potent new business of Our Age: frozen foods.

Its potentialities are so magnificent and so unbelievable, actually, that they cause financial risk-takers to look under the bed, because the promise of this new business seems too good to be true. The future of this incipient industrial giant looks so good today that canny, "show-me-I'm-from-Missouri" investors are now looking for the "catch" or the "gimmick."

They'll never find it.

The coming Age of Frozen Foods is a "natural."

Dr. Harold Vagtborg, who is president of the Midwest Research Institute, predicted last week that the refrigerated food operations are destined to grow from a hundred million dollar per year business—which now comprises less than 1% of the present total food industry sales—to a 10 billion dollar per year segment of our nation's economy.

"In the coming years, one-half of all perishable foods eaten up by a population which is growing toward the two hundred million mark of people with the highest standard of living in the world is destined to be in the frozen classification. Or, its supply will be "normalized" through refrigeration and storage," Mr. Vagtborg predicts.

"The scorned cold storage foods of the past are becoming more and more the premium delicacies of today and tomorrow," he concludes.

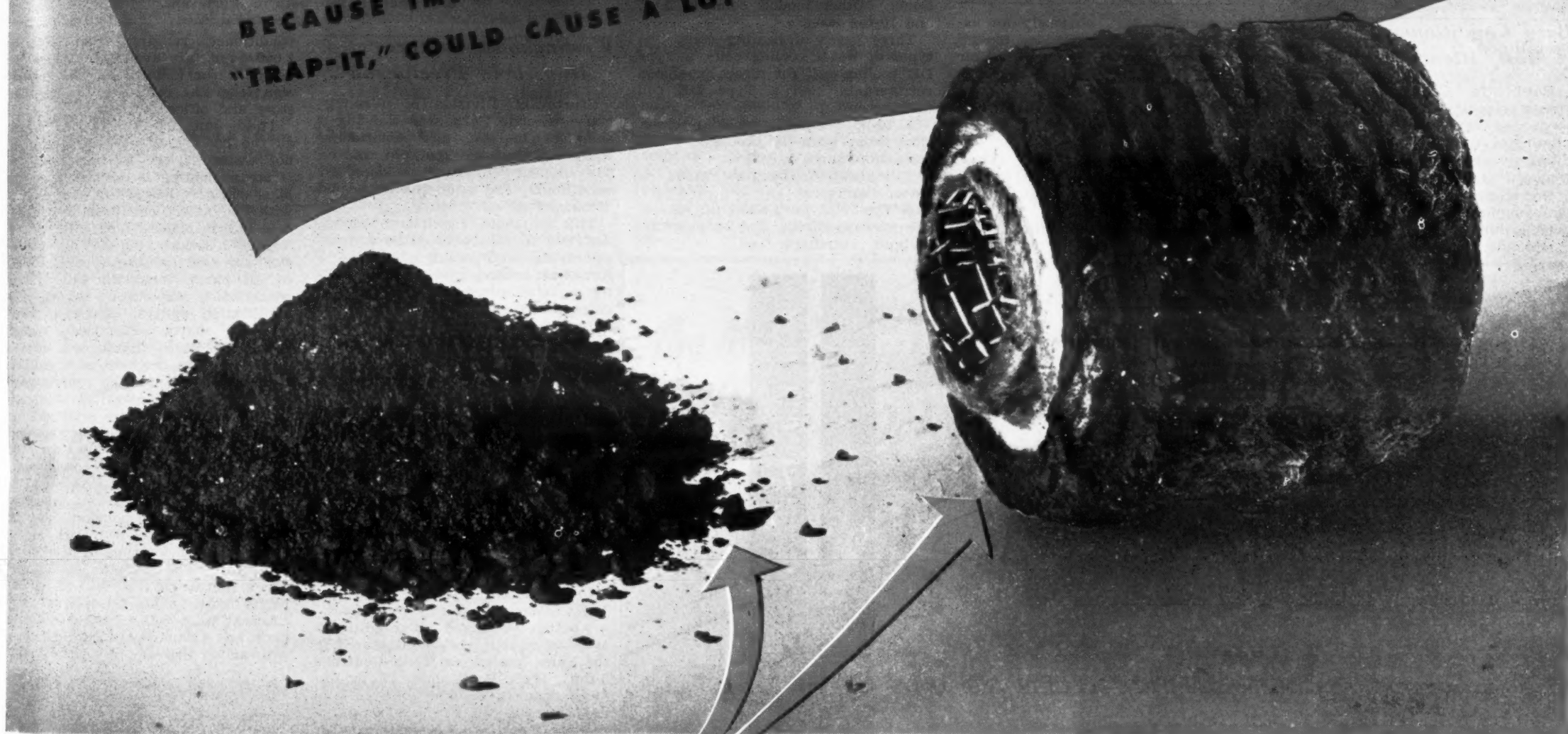
And he's right.

Fellows, get ready for bigger volume in both commercial and household low-temperature refrigeration items. This is a bull market. It can't miss. Take steps to get your fair share of this coming new business.



# Installing a **TRAP-IT** ...improves *ANY* Refrigeration System

BECAUSE IMPURITIES LIKE THIS, REMOVED FROM ONE SYSTEM BY A "TRAP-IT," COULD CAUSE A LOT OF VALVE TROUBLE AND SERVICE EXPENSE



**TRAP-IT**



Refrigeration Parts Jobbers stock the A-P "TRAP-IT" in 3 sizes — for system of 1 ton, 2 tons and 4 tons Freon capacity, or double this capacity in Methyl Systems. Put A-P "TRAP-IT" to work for your benefit now.

Give your customers an extra "guarantee" against common troubles! Install an A-P "TRAP-IT" Filter-Strainer on any refrigeration system, new or old. You'll save yourself many extra callbacks, and avoid many minor service difficulties.

A "TRAP-IT" quickly removes dirt, solder particles, scale, and gummy deposits—impurities which too often result in sticky and clogged valves and other system troubles. The A-P "TRAP-IT" is as effective as a 900-mesh strainer—yet it offers no appreciable pressure drop. Starts cleaning up your refrigeration system immediately—for smoother valve operation and system efficiency.

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## New Entry In the Conditioner Field



In the center background of the Bard Mfg. Co. booth (barely discernible because of the dark background) is a vertical type package air conditioner. This is the first year-round unit introduced by the company, which produces heating equipment. R. O. Bard (in light suit) stands at the left.

### Bard Conditioner Gets Most Attention at Booth

Bard Mfg. Co. of Bryan, Ohio, whose principal line is heating equipment and heating devices, was exhibiting a vertical package air conditioner for year-round air conditioning.

Refrigeration for the model shown was supplied by a 3-hp. Servel condensing unit.

Officials of the company stated that

(Photograph by Austin Jones, Kerotest Mfg. Co.)

the package unit, obviously an assembled job, had been added to "fill out the line" with a complete air conditioner, but discovered that show visitors found it the most interesting piece of equipment in the Bard booth.

### 'Custom-Air,' 'Climate Changer' Shown by Trane

Visitors to the Trane Co. display saw an extensive layout of heating,

cooling, and air conditioning equipment ranging from coils to a 10-hp. reciprocating compressor, and including several units in operation. In this exhibit were:

A newly-designed horizontal "Climate Changer." This unit air conditioner is produced in two types and 20 sizes.

A newly-designed "Custom-Air" room unit, part of the Trane "Cus-

More interesting details of the new products relating to the air conditioning and refrigeration fields which manufacturers displayed at the International Heating & Ventilating Exposition in Cleveland recently are described and pictured here. Numerous displays were written up in last week's NEWS.

tom-Air" system of air conditioning. One of the evaporative condensers which range from three to 100 tons and are manufactured in two types and 13 sizes.

A cutaway of a shell and tube water chiller.

Samples of the 24 types of heat transfer surface.

A 3-ton self-contained air conditioner. Other models come in 5, 7, and 10-ton sizes.

Three types of heating coils, two types of water cooling coils, a Type DE cooling coil for direct-expansion refrigerants, and a Type DE coil distributor.

A 10-hp. reciprocating compressor. This compressor is produced in 13 sizes from three to 100 tons.

Two heat exchangers made in seven diameters.

A Type F.C. multiblade fan, one of the forward-curved and backwardly-inclined centrifugal fans.

## Compact Conditioner Takes Spotlight



(Photograph by Austin Jones, Kerotest Mfg. Co.)

Center of attention at the Westinghouse Sturtevant Division display was the compact "Unitaire" air conditioner, as Al Natkin (left), Houston distributor, will testify. Looking on are E. C. Hach, central district engineer, and Philip Cohen, both of Sturtevant.

### Westinghouse Features Household Precipitron

Sturtevant Division of Westinghouse Electric Corp. was showing a complete line of air conditioning equipment, but the spotlight was on the compact "Unitaire" packaged air conditioner, and upon the household "Precipitron" air cleaner.

This household "Precipitron" model, designed for use with either a year-round air conditioning system or a forced-air heating system, and carrying a retail price tag of \$420, was described in detail in the Dec. 23 issue of the NEWS.

### Variety Keynotes Display Of Temp-Control Units

Displayed in the booth occupied by Temp-Control, Inc. (Peoria, Ill.) was a 5-ton, self-contained air conditioner; a 5-ton, remote, suspension-type conditioner; four Jaden self-contained, cold-water conditioners; and a Jaden unit heater.

Temp-Control, whose line of packaged, "Custombilt" conditioners ranges from 3-ton to 20-ton models, is the eastern factory agent for Jaden (Hastings, Neb.) equipment.

Another packaged air conditioner of 3-ton capacity is manufactured in the same design as Temp-Control's 5-ton "High Boy" unit. Both use "Freon" as the cooling medium, and heating coils can be installed at the factory to provide year-round air conditioning.

The units are equipped with four-cylinder, vertical-type, water-cooled compressors and multiple shell and tube-type condensers. Cooling coils are made from copper tubing, with extended aluminum fins. Multi-outlet thermal expansion valves are used.

Cabinets are fabricated of stretcher-leveled steel. The main structures are of 14 and 16-gauge steel, and all removable panels are of 18-gauge.

Temp-Control's line of self-contained conditioners also includes 7½, 10, 15, and 20-ton models in two other styles. The first two are of one design; the last two of another.

Five models of the remote-type

conditioner, ranging from 500 to 2,000 c.f.m., are available. They are designed for installation by suspension from the ceiling or on regular store and office fixtures.

These units use "Freon" or water as the cooling agent and steam or hot water as the heating medium. If steam heating is desired, a steam blast coil may be used in conjunction with a water or direct-expansion coil, it was pointed out.

Large service panels on either side are said to permit easy access to all parts, including filters, coil connections, expansion valves, humidification sprays, bearings, fans, and fan shafts. Electrical, water, condensate drain, liquid, and suction lines are all at the back of the units.

A second type of the remote conditioner is a "central plant" unit. Models of this kind are produced for both ceiling and floor mounting, and range from 3,000 to 13,000 c.f.m.

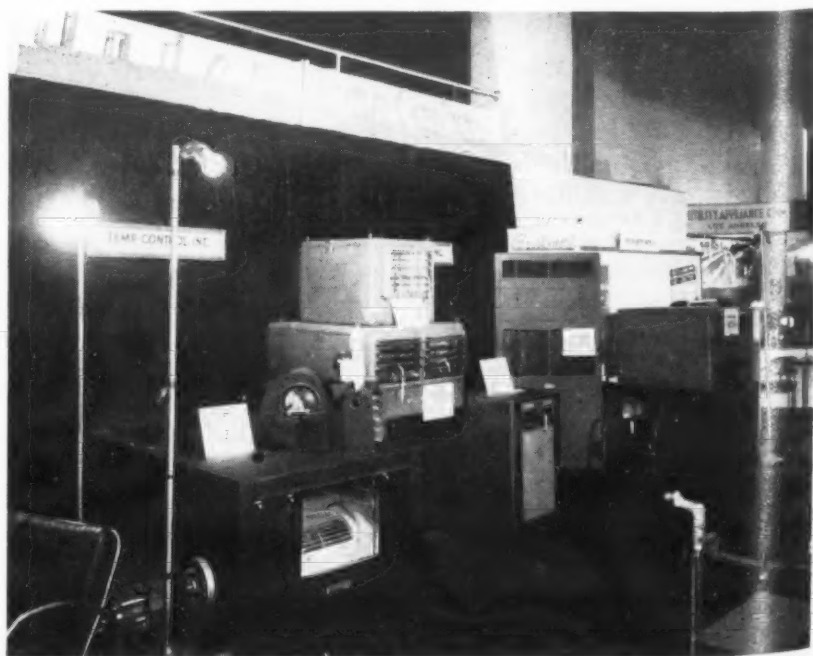
Three of the Jaden conditioners exhibited were Model J-45, a floor-type unit of 1 to 2-ton capacity; Model U-45, a suspension type of 1½ to 3-ton capacity; and Model L-45, a suspension-type of 3 to 6-ton capacity. The fourth conditioner was a central plant of 6 to 12-ton capacity, with an air delivery of 4,000 c.f.m. at ½ in. S.P. A second central plant has a capacity of 12 to 24 tons, with an air delivery of 8,000 c.f.m.

### 'Exclusives' Claimed for Tuttle & Bailey Damper

Products exhibited at the exposition by Tuttle & Bailey, Inc., included the "Aerofuse" ceiling damper and "Tri-Flex" design grilles and registers.

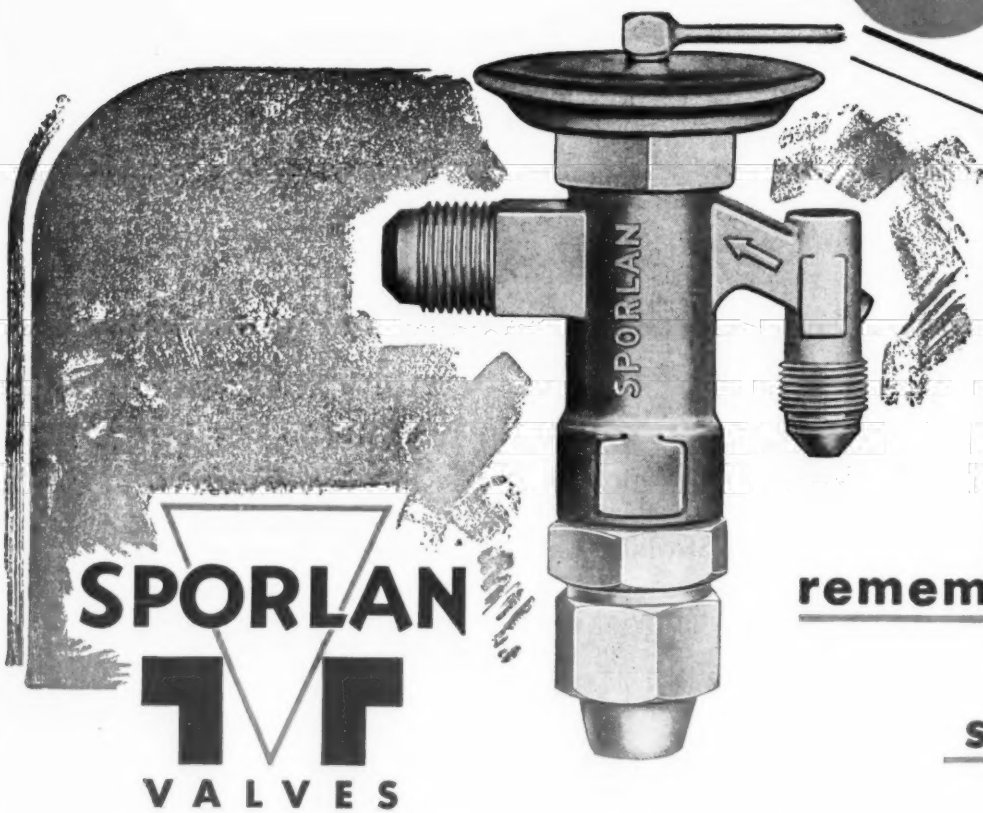
Two of the exclusive features claimed for the damper are that it affords minute adjustment of air volume and that multi-louvers divide the supply air stream, resulting in uniform distribution over the diffuser. Other advantages cited: minimum turbulence in the air stream, 100% shut-off, louvers can be locked in any position, and operator handle and rod are removable.

"Tri-Flex" grilles and registers are said to make possible "complete and efficient control of air delivery."



Several models of air conditioning equipment, including self-contained and remote types were shown in the Temp-Control booth. Both direct expansion and cold water conditioners were displayed.

For  
**PEAK PERFORMANCE**  
On All Refrigeration Installations . . .



SPORLAN "C" CHARGE FOR SUCTION TEMPERATURES Above ZERO

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MODULATING PILOT CONTROLS  
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STRAINERS, CATCH-ALLS  
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## Air Conditioners Highlight Heating & Ventilating Show



An improved air return system, easy accessibility for servicing, and full filtering area are among the features which E. Feinberg (center), head of American Thermal Industries, Inc., claims for his package air conditioners. At the left is a 5-hp. model, and in the background is the 7½-hp. machine.

### American Thermal Claims Better Air Return System

Package air conditioners with a number of unusual features were shown by American Thermal Industries, Inc.

An air return system which is claimed to provide better cooling of the motor, compressor, and liquid receiver is achieved by bringing the return air in through the machine compartment in the lower section of the cabinet. It then passes up through an eliminator to the cooling coil.

Easy accessibility of all component parts for servicing is claimed. The "slug-free" compressor control system is easily reached through a front panel.

Full filtering area is another claim made, the front and rear filters being interchangeable. All moving parts of the conditioner are isolated from the frame to provide quiet operation.

Although primarily designed as a package conditioner, the unit can be connected to ductwork, and the high and low sides remotely installed.

### Operating Displays Show Air-Maze Filter Action

An attention-getter in the Air-Maze Corp. space was an operating display, built around a mock range, which accented advantages of the concern's all-metal, washable "Greastop" air filters for kitchen-range canopies.

A second operating display demonstrated the automatic oil-washing action of the Air-Maze oil bath air filter.

Around the booth were various models of air and oil filters. Among these were panel-type air filters, pipeline filters, breather-filters, and oil separators.

### Rome-Turney Spotlights 'Rocop' Convector Line

The Rome-Turney Radiator Co. brought to the exposition models of "Rocop" convectors and enclosures, samples of helical fin surface, and a blast air heater. A convection heater that had been cut in half to show construction was on display.

### Connor Visitors Test Carbon Adsorber Units

A "window" chamber containing Dorex Activated Carbon Adsorbers was set up at one end of the W. B. Connor Engineering Corp. booth to demonstrate the effectiveness of the adsorbers in recovering the freshness of contaminated air. Visitors were invited to sniff the air on both sides of the adsorbers when bottles of various fluids were held up to the chamber entrance to compare the untreated air with the other.

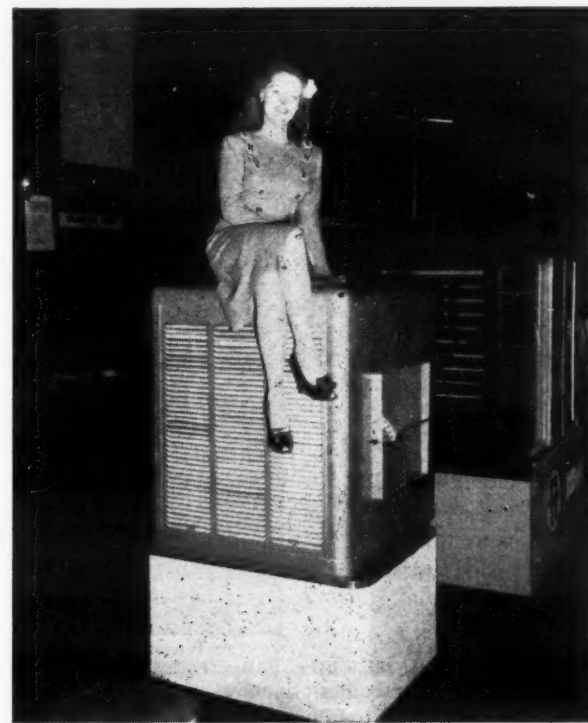
Samples of the several types of Dorex equipment available were displayed, including a litter unit developed during the war. The line includes the Type H canisters, the Type G panel unit, the Type SQ cage assembly, the Type PL gas adsorber, and the Type A cabinet unit.

The firm also demonstrated operation of the "Kno-Draft" adjustable air diffusers. Included in this line are the Type K for supply air and the Type SR for combination supply and return air.

Complementing the function of the air diffuser is the Type D air volume control.

## Heating Firm Adds Cooling Unit

Attractive Jeanne Walker of Cleveland Heights poses atop an evaporative cooling type blower-filter unit which has been introduced by Rheem Mfg. Co. of San Francisco. Rest of the company's large display was devoted to a wide variety of heating equipment.



(Photograph by Austin Jones, Kerotest Mfg. Co.)

### Panels Show Wide Range Of General Controls Co.

Six panels making up the General Controls display showed off the company's line of automatic pressure, temperature, and flow controls for gas, oil, water, air, steam, and refrigerants.

These products included valves, switches, relays, thermostats, and others.

### Evaporative Cooler In Rheem's Heating Line

Rheem Mfg. Co. showed a broad line of heating equipment, but the one item of interest to air conditioning contractors was an evaporative cooling type air conditioner.

Housed in an attractive cabinet, the assembly consisted of a blower with over 1,000 c.f.m. capacity, evaporating mats, and suitable connections.

### \$253,602 Net In 6 Months Reported by Mission Co.

LOS ANGELES—A net income of \$253,602, after all charges and taxes, was reported for the six months ending Dec. 31, 1946, by the Mission Appliance Co. here and its subsidiaries.

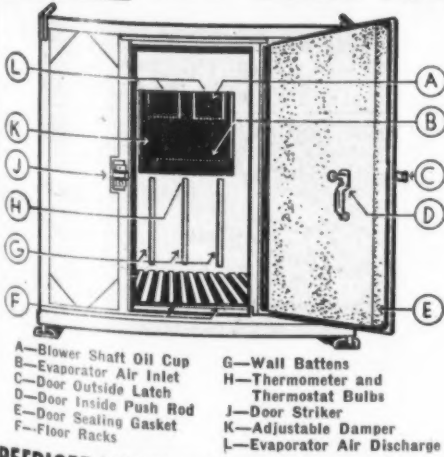
Consolidated net sales for the same period totaled \$3,134,570, president Albert H. Sutton announced.

## Father & Son Check Over Exhibit



W. L. Lynch (left), president of the Rome-Turney Radiator Co., chats with E. L. A. Forster, sales promotion manager, in the company's booth, while Mr. Lynch's son listens in. "Rocop" convectors and enclosures were prominently featured in the company's display.

## NEW! 125 CUBIC FOOT WALK-IN COOLER



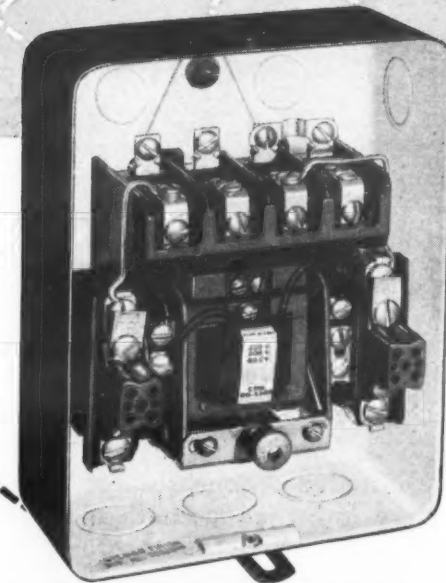
- ★ SELF CONTAINED
- ★ FULLY AUTOMATIC
- ★ GAS DRIVEN REFRIGERATION UNIT

Ideal for FROZEN FOODS, ICE CREAM STORAGE, PRODUCE STORAGE, TRUCK MOUNTING.

- PACKED FOR EXPORT
- BLOWER COIL
- ALL METAL—Corkboard Insulated
- FULLY ASSEMBLED
- VIBRATION FITTINGS
- LOW OR NORMAL TEMPERATURE

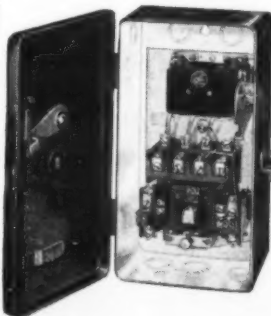
REFRIGERATION ENGINEERING CORP., 1518 Walnut St., Phila. 2, Pa.

The Motor Starter that's  
GOOD FOR MILLIONS of  
Trouble-free Operations



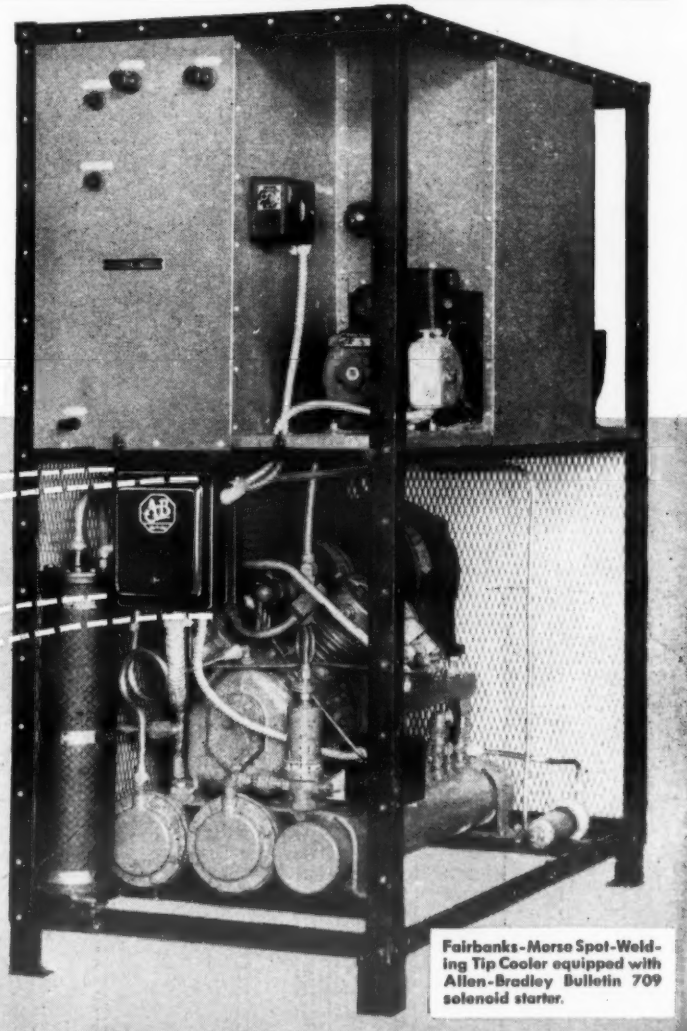
ACROSS-THE-LINE SOLENOID STARTER

Bulletin 709, solenoid starter with cover removed. White interior reflects light in dark corners.



COMBINATION STARTER

Bulletin 712, Size 1, solenoid starter. Consists of an automatic solenoid starter and a hand operated disconnect switch combined in one cabinet. Takes less space than separate units, cuts wiring costs, and presents a much neater appearance. It's the sign of an up-to-date installation.



Fairbanks-Morse Spot-Welding Tip Cooler equipped with Allen-Bradley Bulletin 709 solenoid starter.

## Only ONE Moving Part on Allen-Bradley Solenoid Starters

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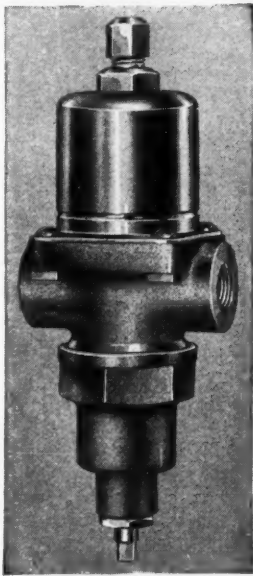


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For more details see Bulletin No. 15.

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## Self-Serve Ice Cream Cabinet Speeds Sales

ADAMS, Neb.—A six-compartment ice cream hardening cabinet installed in the center of his drug store, about 20 ft. back from the front entrance, has served as a business booster for Earl M. Stake here.

Not only does the white-enameled box make an attractive addition to the fixtures, he said, but it has proved to be an especial attraction to school children who flock into the drug store and help themselves to frozen confections, leaving their money on the soda fountain bar.

Because of the shortage of help, the self-service feature of the refrigerated box is a real asset to business, Mr. Stake pointed out. Sales would be slowed down considerably if the children had to wait in line to purchase frozen ice cream bars and similar merchandise at the soda fountain. The drug store proprietor estimates that his trade with youngsters has increased at least 30% since he installed the new box.

The farm trade also likes the idea of having the box out in the open where they can go in and see for themselves the various brands available to be taken home. Mr. Stake added that the freezer has taken much of the load off the fountain refrigeration system by providing storage space for packaged ice creams and confections, as well as for extra bulk ice cream containers.

Adams, with only 500 population, does not have an ice cream plant, and the drug store has its ice cream trucked in from a larger town. With the extra storage space, Mr. Stake can avoid running out of the product.

## Servicing Truck Refrigeration Units

**Editor's Note:** This instalment of the series on the Trail-Aire reverse cycle truck unit tells how to pump down the condenser or lower coil, and lists the parts of the system which may be repaired or replaced when the unit is pumped down in this manner. This series was prepared in collaboration with Henry O. Kirkpatrick, chief engineer of Advance Mfg. Co., producer of the unit.

### Instalment No. 21

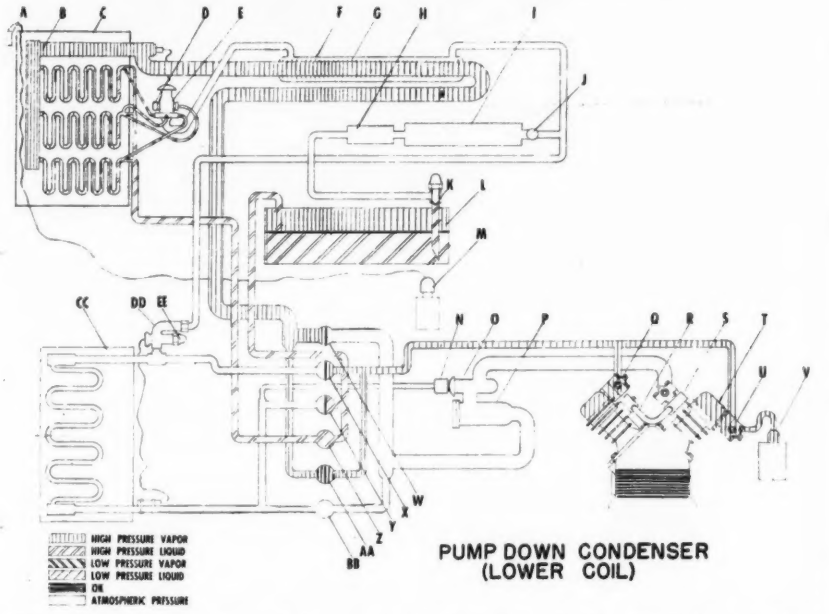


Fig. 24—State of the refrigerant in all parts of the Trail-Aire system when the condenser coil (CC) has been pumped down is shown above.

Key to drawing: A—thermostat bulb; B—evaporator suction header; C—evaporator coil (upper); D—expansion valve adjusting stem; E—multi-outlet thermostatic expansion valve; F—heat exchanger; G—heat transfer fins; H—liquid line strainer; I—dehydrator; J—liquid indicator; K—receiver service valve; L—receiver tank; M—thermostat temperature control; N—load limiting valve bellows; O—suction load limiting valve; P—suction line strainer; Q—compressor discharge service valve; R—compressor suction manifold; S—compressor suction service valve; T—compressor; U—compressor discharge service valve; V—high pressure cut-out; W—hand valve suction (cooling); X—hand valve discharge (cooling); Y—hand valve liquid return (cooling); Z—hand valve liquid return (heating); AA—hand valve discharge (heating); BB—hand valve suction (heating); CC—condenser coil (lower); DD—thermostatic expansion valve; EE—thermostatic expansion valve adjusting stem.

### Pumping Down Condenser (Lower Coil)

When the condenser or lower coil (CC) in the Trail-Aire unit has been properly pumped down, i.e., almost all the refrigerant has been removed, the coil may be repaired or completely removed. At the same time repairs or replacements may also be made to some other component parts of the system. The latter are:

1. Thermostatic expansion valve (DD).
2. Load limiting valve bellows (N).
3. Suction load limiting valve (O).
4. Cooling discharge hand valve (X).
5. Heating suction hand valve (BB).
6. All lines connecting any of the above parts, including condenser coil (CC).

To pump down the condenser, as shown diagrammatically in Fig. 24, it is necessary to set the valves on the unit properly and to employ a pair of accurate pressure gauges—a low pressure gauge reading from 30 in. vacuum to 150 lbs. pressure and a high pressure gauge registering from 0 to 300 lbs.

The following valves must be open:

1. Heating liquid return hand valve (Z).
2. Heating discharge hand valve (AA).
3. Heating suction hand valve (BB).
4. Compressor discharge service valves (Q) and (U).
5. Compressor suction service valve (S).

The following valves must be closed:

1. Cooling suction hand valve (W).
2. Cooling discharge hand valve (X).
3. Cooling liquid return hand valve (Y).
4. Receiver service valve (K).

The high pressure gauge (0 to 300 lbs.) should be installed in the gauge port of the compressor discharge service valve (Q) and the low pressure gauge (30 in. vac. to 150 lbs.) in the gauge port of the compressor suction service valve (S).

It should be noted that the lower coil cannot be pumped down in this manner unless the thermal bulb of the multi-outlet thermostatic expansion valve (E) is removed from its well in the suction line of the upper compartment and placed in a bottle of ice water or very cold water. If this is not done, the valve (E) will stay in the open position and allow refrigerant to bypass through.

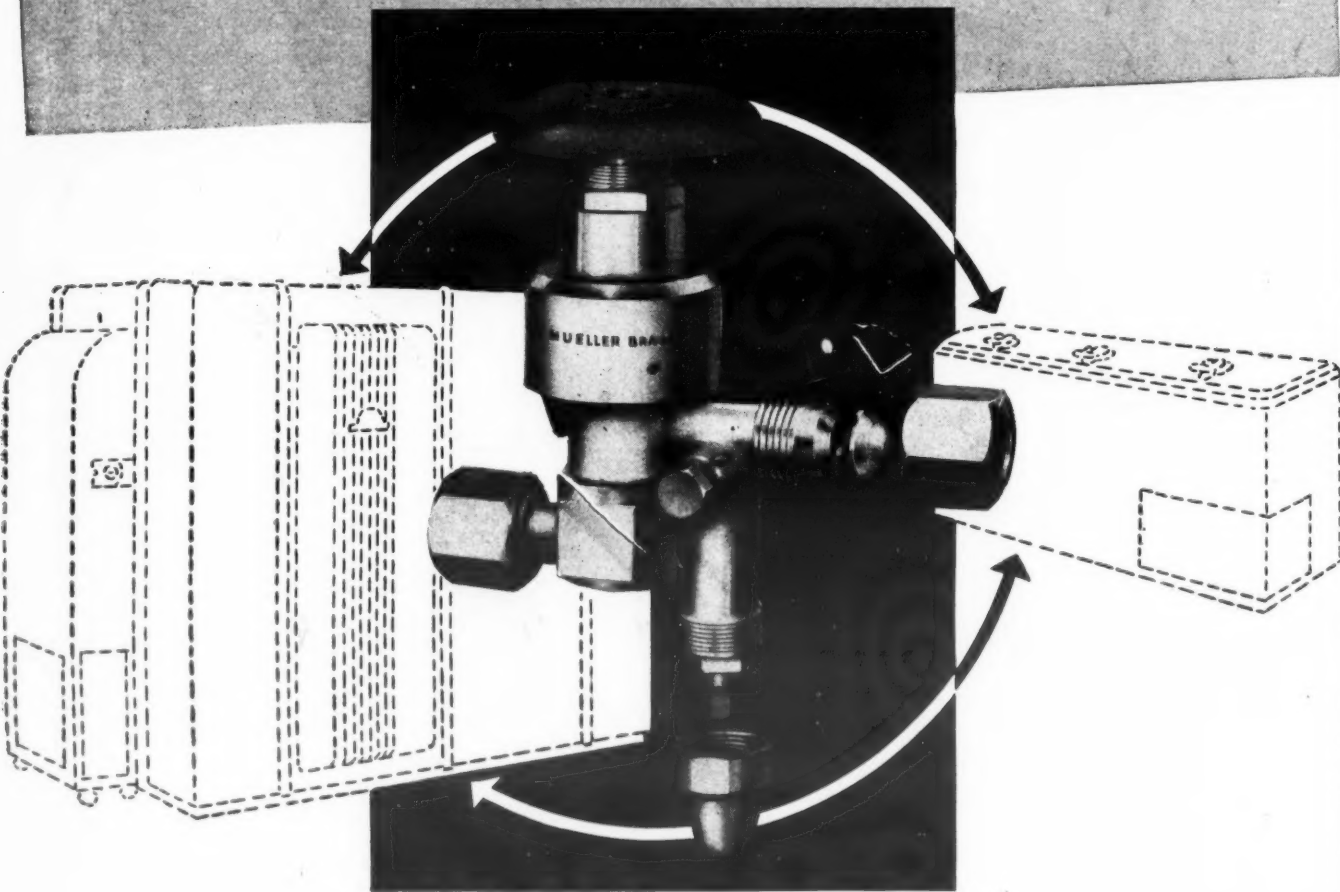
With the valves properly set, the thermal bulb of the valve in ice water, and the gauges in place, start the unit and let it operate until the low pressure gauge shows 5 in. vacuum. Stop the unit. The pressure may rise to 10 lbs., so the unit will have to be started and stopped until the compound gauge will remain between 3 and 5 lbs.

### Replacing Condenser

Removing and replacing the lower condenser coil (CC) would constitute a major repair job. The condenser coil tube return bends are silver soldered. The header blocks are silver soldered to the inlet at the top and to the outlet at the bottom. The refrigerant lines at the inlet and outlet are 5/8 in. o.d. tube which are soft soldered into the header blocks.

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An exclusive feature of this valve is the provision for by-passing the automatic valve in case it is desired to pump all the refrigerant from the coil. By means of this by-pass arrangement, the automatic valve can, in effect, be cut out of the system and the coil opened directly to

the suction line. Provision is also made for the attachment of a pressure gauge while the line is under pressure.

There is no limit to the number of valves that can be installed on one system. When several boxes are to be maintained at different temperatures, the Two-Temperature Valves are installed on the higher temperature units.

An oval handle, which is independent of the automatic closing feature, provides manual closing and eliminates the use of a separate line valve.

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# Humidity Alone Can't Control Odor Diffusion, Intensity, ASHVE Hears

## Richard Kuehner Describes York Corp. Tests at Conference of Heating Group

By C. Dale Mericle

CLEVELAND—Simple control of relative humidity cannot be depended upon to control the diffusion and intensity of odors in air conditioning systems, according to Richard L. Kuehner, York Corp. bacteriologist, who described preliminary results of research conducted at York before the recent annual meeting of the American Society of Heating and Ventilating Engineers here.

"People in air conditioning circles have long been wondering just what the relationship of odor to relative humidity is, and the confusion regarding this relationship is apparent," said Mr. Kuehner.

Relative humidity does have some effect on odors, but it is unpredictable, he declared, citing tests where three odors diffused more rapidly at 100% r.h. than at 0% r.h. while two others worked just the opposite.

"Accordingly, since most odor problems involve odor aggregates, one could not expect a uniformly depressant effect with either high or low relative humidity," he commented, also pointing out that "the differences in rates of diffusion of specific odors at extremes of from almost 0% to 100% r.h. are so small that commercial design relative humidities of from 45 to 55% would have no effect on the odor problem."

### Effect of High Temperatures

Temperature has some effect on how fast odors spread, also, but here the temperature variations have to be considerably more than those found in commercial air conditioning systems to have any appreciable effect, said Mr. Kuehner.

The role played by diffusion in odors permeating the air in a room is a major one, according to Mr. Kuehner. To prove its importance, as compared with the factor of convection in distributing odors, he said that it is "common knowledge that certain minimum velocities of air must be maintained from the odorless area toward the odorous area," as in the case of restaurant kitchens and dining rooms.

Commenting on some of Mr. Kuehner's statements, Charles S. Leopold, consulting engineer, said he failed to see why the rate of diffusion of odors is of primary importance in a structure that is well ventilated. Regarding the relation of odor to relative humidity, he added that it is well known that "a group of people is a lot more pleasant in a cool, dry atmosphere than in a hot, damp one."

Two sets of diffusion test apparatus were employed at the York Corp. tests, the first being discarded after it proved unsatisfactory. The original

setup consisted of a central beaker serving as the odor source to which was connected by glass manifolds and rubber tubing six Erlenmeyer flasks, all at equal distance from the central reservoir. When the odor was released in the central beaker each flask was tested at intervals, using the nose to detect the presence of the odor and thus establish the rate of diffusion.

The second apparatus design consisted essentially of a length of Pyrex tube 3 in. i.d. by 4 ft. 7½ in. long. In addition to openings in the ends of the tube for introducing the odor, testing air pressure, and evacuation of air, there were four take-off sampling connections for testing the rate of diffusion. Except for the odor injection tube and the four sampling connections, the entire unit was placed in water to control temperatures.

### The Nose Knows

"From the beginning," explained Mr. Kuehner, "the reliability of the human nose for a measurement means was a critical point in this work. However, it was found that the nose did not decrease appreciably in sensitivity upon repeated smelling if the odor was smelled only at threshold or slightly above. If a very high concentration of odor were smelled, the olfactory mechanism was temporarily paralyzed toward that specific odor and did not return to 100% efficiency for considerable time thereafter."

Five basic types of odors were

tested: acetic acid (occurring in the human body odor); methyl acetate (found in the decomposition of fruits and flowers); iso-valeric acid (occurring in animal sweat and burning tobacco); butyric acid (dairy products); and pyridine (occurring in protein decomposition and tobacco odor).

"The rate of odor diffusion is controlled primarily by the vapor pressure gradient of the substance," believes Mr. Kuehner, who adds that "within a given odor the absolute speed of transmission of that odor as controlled by the vapor pressure gradient may be varied markedly by the temperature at which the phenomenon takes place. However, this is not a fixed and fast rule since marked variants from this rule have been found."

## WAA Sealed Bid Metals Sale Closes Feb. 19 on East Coast

NEWPORT, R. I.—Several tons of government surplus prime metals are being offered by the War Assets Administration in a sealed bid sale now under way here. Closing date for bids has been set at Feb. 19.

On the block are 4,430 lbs. of brass bars and sheets, 1,481 lbs. of wrought iron bars, 806 lbs. of copper rods, 2,072 lbs. of copper sheets, and 249 lbs. of phosphor bronze.

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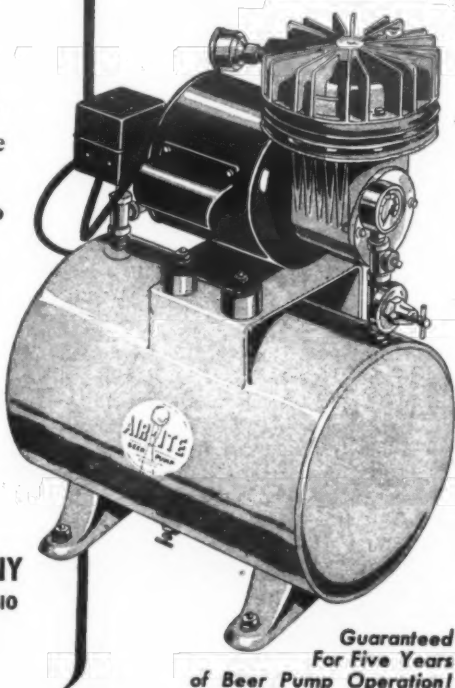
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# Effectiveness of Germicidal Lamps In Recirculated Air Systems Cited

## Devices Developed by G-E to Improve Sampling of Air Described to ASHVE

CLEVELAND—Germicidal lamps in air ducts will kill almost any micro-organism in a recirculated air system, declared A. H. Taylor of General Electric Co.'s Lighting Research Laboratory in presenting a paper at the Public Auditorium here during a joint meeting of the American Society of Heating and Ventilating Engineers and the National Warm Air Heating and Air Conditioning Association.

He discussed "Determining the Reducing the Concentration of Air-Borne Micro-Organisms," a paper which Matthew Luckiesh, director of the laboratory, and he had prepared.

### Ventilation Limited In Killing Air-Borne Germs

"It is fairly well proven that a great many diseases are spread by micro-organisms, and one of the purposes of ventilation is to remove such organisms by replacing vitiated air with fresh air," said Mr. Taylor. "But this has definite limitations."

Many air-borne micro-organisms are resident in dust, but the majority of them are harmless, he commented. "There are probably 20 to 50 per cu. ft. of air in this room right now, and if many or all of them were pathogenic, it wouldn't be safe to be here."

Many air-borne bacteria come originally from the throats of human beings, for each individual has many in his throat, most of them being harmless, he said, adding that these are spread around not only by coughing but merely by talking.

### Earlier Sampling Methods Were Difficult to Handle

"In our earlier work with micro-organisms some of sampling methods available for use were fairly efficient, but all them were difficult to handle," continued Mr. Taylor.

At the G-E laboratory an electrostatic method of obtaining air bacteria samples has been evolved. As described by Mr. Taylor, this sampling method incorporates two petri sampling dishes in a small case weighing 12½ lbs., one dish being given a negative electrical charge, the other a positive charge. By this means electrically charged dust particles and bacteria were precipitated onto the petri dishes.

Petri dishes, which, he emphasized, are very important in these sampling tests, contain a nutrient medium which is poured into the dish at temperatures of 45 to 50° C. It cools to a jelly and then is in a state to collect micro-organisms.

"When first collected, the micro-organisms are invisible, but after they have been incubated at blood heat the colonies increase in size for 72 hours. We usually make our counts after 48 hours, because after that there is usually a growth in size but not the number of colonies. Some organisms, however, grow very slowly and thus require a longer incubation period."

Using its sampling method and machine, the G-E laboratory has conducted numerous tests on the effects of ultraviolet germicidal lamps in schools, hospitals, cafeterias, farm buildings, doctor's reception rooms, etc., according to Mr. Taylor.

### Ultraviolet Lamps Permit Progressive Killing

"A number of years ago we introduced a germicidal lamp (similar in some respects to the present fluorescent light), which radiates ultraviolet light at roughly 2537 Angstroms," he continued. "This type of lamp is five times as effective per watt at the quartz-mercury lamp, and permits progressive killing with increasing dosage."

Care must be used in installing these lamps, pointed out Mr. Taylor. Usually they are installed near the ceiling of a room, or in air ducts, for prolonged exposure may have a harmful effect on the eyes.

"With a good installation there is a definite reduction in the number of air-borne micro-organisms. Most of our studies so far have been limited to non-pathogenic types, but soon we expect to have equipment to test the effect of germicidal lamps on dangerous organisms," he declared.

"In humidities of over 50% these micro-organisms are harder to kill, but indoors in winter, it is usually pretty hard to get the relative humidity up to 50%. Incidentally, it only takes 1/25 to 1/30 as much exposure to ultraviolet radiation to kill respiratory organisms as it does to kill dust-borne organisms. Therefore, if 25% of all the dust organisms are killed, then practically all of the respiratory organisms have been destroyed."

### Develop Lamp Tester

To test the effective life of these germicidal lamps, G-E has developed a germicidal wattmeter. The effectiveness of the lamps cannot be determined merely by looking at them, he said.

"We must have a standard method of judging the effectiveness of germicidal methods in connection

with air-borne bacteria," declared Dr. C. E. A. Winslow, commenting on Mr. Taylor's talk. "The most important organisms, such as viruses, don't grow on petri dishes."

"We must agree on standard methods of determining the index for such tests. I believe, for example, that results would have shown up much better if staphylococci only were used. It is important also to consider and compare the costs of three methods of destroying air-borne bacteria:

"1. Reduction in number of organisms by treating objects such as beds, etc. with dust-holding oil.

"2. Disinfection of air by means of chemicals.

"3. Disinfection by ultraviolet rays.

"It also must be determined," declared Dr. Winslow, "just how important any of these methods may be for a specific room."



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## Financing Agencies Can Help Appliance Dealers In Several Ways, Bankers Told

ST. LOUIS—What major appliance distributors expect of financing agencies who handle time payment plans for major appliance sales were outlined recently for the American Bankers Association by John L. Busey, president of the National Electrical Wholesalers Association.

Mr. Busey, who is also president of the General Electric Supply Corp., listed the appliance financing "essentials" as:

"1. We must first recognize that a time payment plan is a basic sales tool in the retail selling of major appliances, radios, and television sets.

"2. As a sales tool, instalment financing must be used in varying degrees under varying circumstances. When sales are brisk and volume is easily obtained, terms can be relatively short and down payments relatively large. However, when sales volume falls off and the consumers' income declines, terms must be extended as long as possible and down payments reduced as low as possible within reasonable limits.

"3. We need financing agencies that will accept a reasonable number of borderline risks in order to serve our dealers adequately in all areas.

"4. The financing agency must be willing to judge a dealer not only on his net worth, but to a large extent on his character and sales ability.

"5. We have an interest in aiding the dealer in maintaining contacts with his customers. Some of the progressive finance companies permit the dealer to accept instalment collections in his store. This draws the customer into the store at periodic intervals and exposes him to other appliances on display.

"6. The financing agency must assume responsibility for training wholesale and retail salesmen in financing methods and routines and sell them on the merits of the plans offered.

"7. Our dealers must have inventory financing facilities—and flexible ones. This is a very essential part of the appliance distribution business and is generally handled under the so-called 'Wholesale Floor Plan.'"

Mr. Busey also called the bankers' attention to the possibilities of "package mortgage" financing whereby the cost of all major appliances in a new home are covered by the house mortgage.

"A large number of the houses to be built in the future will be constructed one at a time by small builders based on specifications of the purchaser," he pointed out.

"To promote the 'package mortgage' in this market the banks should work with the local dealer who will sell the appliances," he asserted.

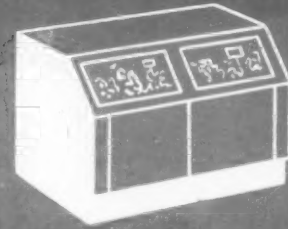
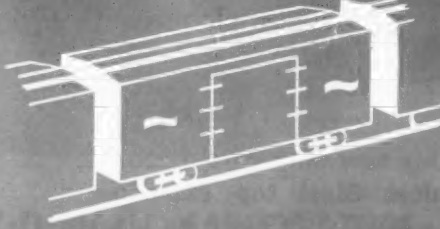
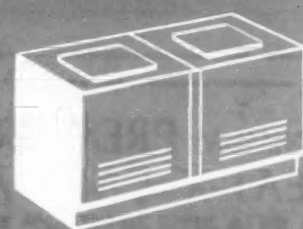
"If you will assure him that you will accept a 'package mortgage' deal he will have an excellent tool with which to promote the sale of a full contingent of labor saving appliances in individual homes under construction. In this field I think the banks must take the initiative."

Mr. Busey said that today, the housewife is thinking in terms of an electrical home with all the appliances, rather than in terms of any one appliance.

"On this basis she will be thinking in terms of dollar purchasing that requires financing on a scale comparable to that customary in the automobile business," he declared.

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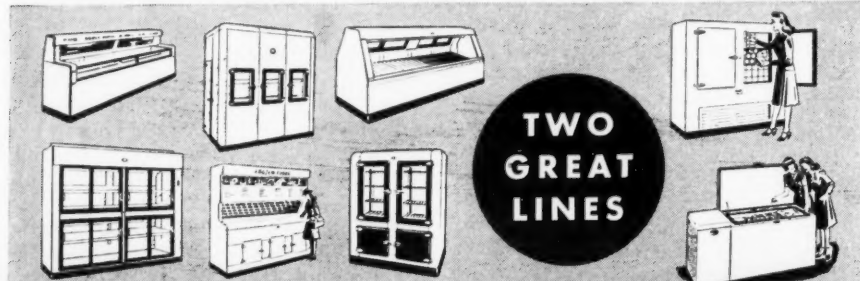
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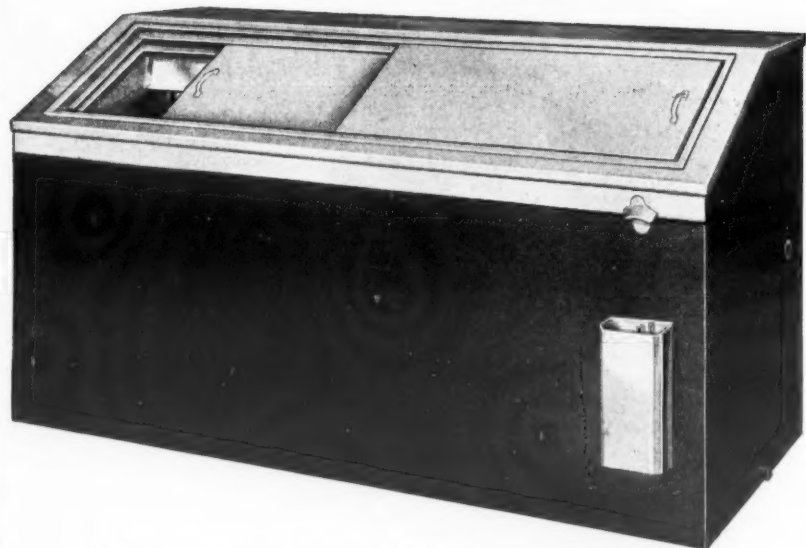
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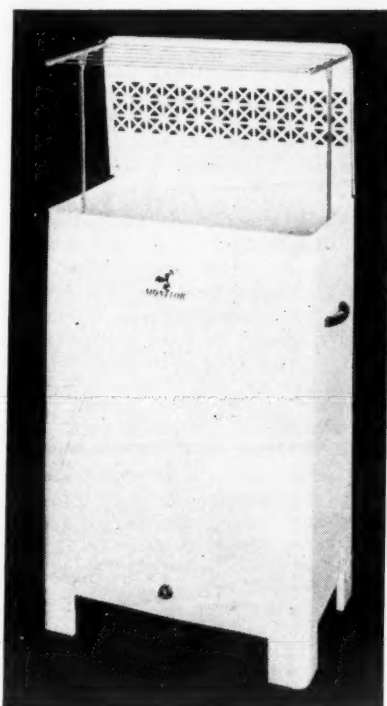
52" (15 cases); 74" (23 cases); 98" (31 cases); 118" (39 cases)

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Cleveland 15, Ohio

## What's New



Monitor Clothes Dryer

### Monitor Clothes Dryer Serves In 3 Capacities

NEW YORK CITY — Monitor Equipment Corp. here has developed a home drying unit for clothes, which it says can also be used as a space heater, or when not used for either purposes it will function as a storage bin for soiled clothes.

It features the new principle of "black heat," which the manufacturer says will dry the wettest clothes in less than two hours. A dial light mounted on the cabinet indicates when the unit is in operation.

The heater consists of two 350 watt thermostatically controlled heating units, protected against dampness and contact with the clothes.

Cabinet is finished with white enamel and has black handles. Clothes racks are of non-rusting aluminum and have a capacity of 20 ft. of clothes line, the company explains. The Monitor drier retails for \$49.50.

### Morey Manufactures New Pump for Recirculating

LOS ANGELES—Many uses are claimed for the new Morey recirculating pump, which is said to have ample capacity for any evaporative cooler.

Manufactured by the Dan Morey Dept. here, the pump may also be used for circulating coolants for lathes and other machine tools, for spot welding, light industrial uses, and for trick water displays.

It has a water output of 2 g.p.m. at 72-in. head.

### Miller Oil Heater Can Fit Inside Kitchen Cabinet

MERIDEN, Conn.—A new automatic oil-fired boiler-burner heating unit, which is so small it can be placed in an ordinary kitchen cabinet, was introduced recently by the heating products division of the Miller Co. here.

The new heating unit is said to provide sufficient hot water radiation to comfortably heat small homes of three to five rooms plus a year around supply of hot water from the faucet.

The compactness and high heating efficiency of the unit is primarily due to the Miller developed heat spiralator, which gives the products of combustion a spinning motion through nine vertical fire tubes, according to the company.

This spinning motion builds up pressure instead of a draft in the



Miller Oil Heater (without steel jacket for hidden installation).

### Small Appliance Trailer Has Low Loading Platform

BUFFALO—Charioteer, a trailer designed for use in delivery of major appliances, phonographs, plumbing fixtures, and coin machines, is being distributed by Warmac, Inc., here.

The trailer is equipped with special springs, 6-ply heavy-duty tires, and a 12-ft. web belt to protect appliances against shock or damage, the firm points out. With a rated capacity of 1/2-ton the Charioteer is said to have carried much more in tests. It may be attached to any car.

Easy loading is provided for by the low platform, which is only 14 in. from the ground. The company claims that only two men are needed



Miller Oil Heater (with steel jacket for open installation).

firing zone resulting in a new high heat transmission per square foot of boiler surface, Miller says. It also scrubs the walls of the fire tubes throughout their entire length, the company adds.

The firing unit of the new heater is the Miller vaporizing burner, used in the Miller conversion oil-burner introduced just before Pearl Harbor. It burns a maximum of 8/10 gal. of No. 1, 2, or 3 oil per hour at high fire, Miller asserts.

The heater comes with or without a heavy gauge steel jacket. With the jacket, it measures 24 x 36 x 36 in. Without the jacket, it measures 23 x 34 1/2 x 34.

The jacket has a linoleum covered work table surface.

Miller designed and manufactured controls provided with the heater are: a control level valve, a high limit control, an aquastat for summer-winter hot water, an ignition control, and a water circulator control.

A room thermostat and a draft regulator are supplied with the unit, but are not installed.

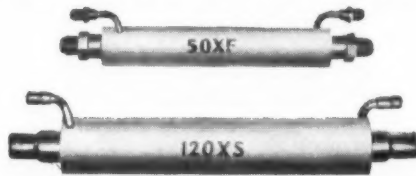
In addition the following accessories are installed on each boiler-burner unit: circulator, flow control valve, indirect domestic hot water coil, and temperature-altitude gauge.



The Charioteer

to handle the trailer when it is loaded. Small size of the trailer allows for its passage through narrow places and onto freight elevators.

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## What's New (Cont.)

### Compact Laundry Featured



The series of cabinets shown above comprises the Blackstone "combination laundry" which the firm exhibited recently at the Chicago Furniture Marts. From left to right, it consists of a counter-height washer (25 in. wide), dryer (29 in. wide), and ironer (18 in. wide).

### Fogel Case Designed for Fresh or Frosted Foods

PHILADELPHIA — A new self service frosted food display case in both 6 ft. and 8 ft. models, is now being produced by the Fogel Refrigerator Co. here.

The Model 3900F case was developed after experimentation with sev-

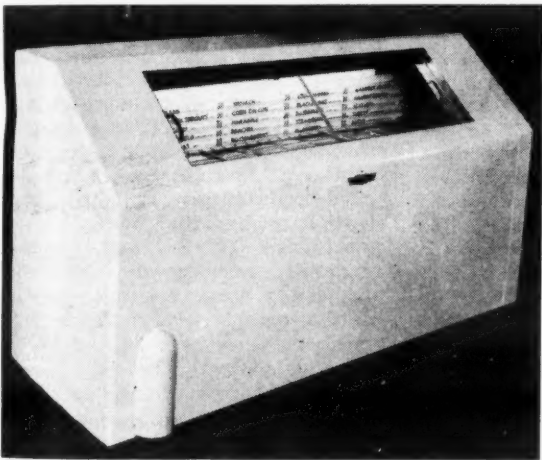
eral models over the past few years as the most logical solution to the problem of adequate refrigeration for frosted foods combined with a maximum amount of eye appeal, according to S. H. Batt, of Fogel.

By removing the Plexiglas doors and setting the condensing unit for a defrost cycle, the unit can be used for storage and display of fresh vegetables, he pointed out.

Both illuminated and non-illuminated superstructures are available as extra equipment with the cabinet, the manufacturer said.

Both the 6 ft. and 8 ft. models have a width of 27 in. and a height of 39 in. The 6 ft. unit has two doors and a capacity of 525 packages of frozen food. The 8 ft. case has three doors and a capacity of 775 packages.

All cabinets are furnished with a fluorescent lighted interior as their standard equipment.



The Fogel 6 ft. frosted food display case.

### 'Dogmaster' Cooks 10 Hot Dogs In 1 Operation

HOLLYWOOD, Calif. — Dogmaster, a new home cooker for hot dogs manufactured by Maxwell Electrical Products here, is said to cook the franks "to a king's taste" in a minute and a half.

The unit, which is merely plugged into any standard outlet, will cook as many as 10 hot dogs in one operation. About six ounces of water are poured into each side of the Dogmaster, and the weiners are laid crosswise so both ends are in the water. The lid is then closed for the specified cooking time.

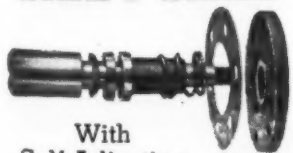
There is said to be no odor, grease,

or mess. Even children are able to operate the unit, the manufacturer points out.



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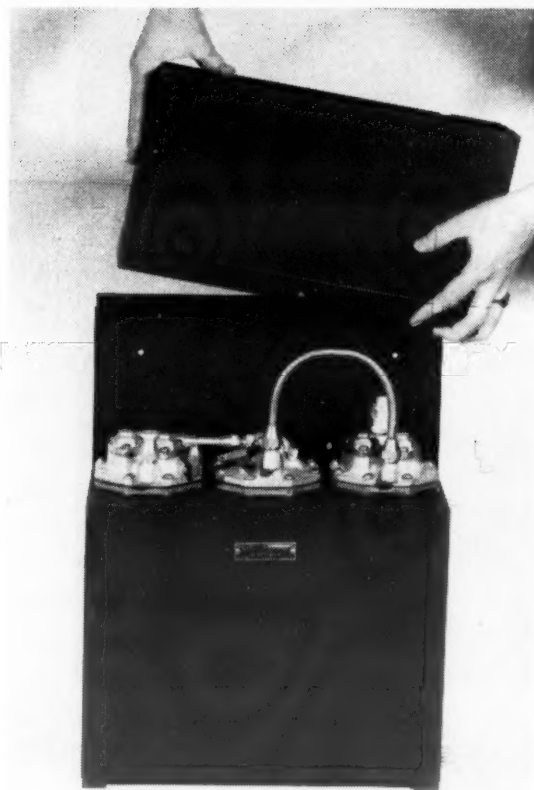
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BUSINESS NEWS PUBLISHING CO., DETROIT

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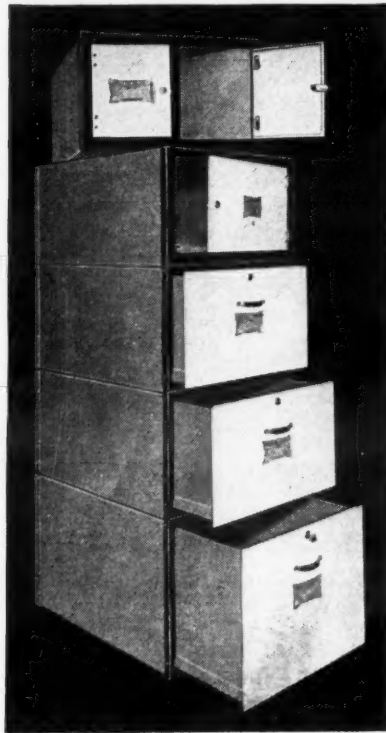
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## Text of Court Decision Reversing Potter vs. Stewart-Warner Case

United States Circuit Court of Appeals  
for the Seventh District

OCTOBER TERM, 1946, JANUARY SESSION, 1947  
REFRIGERATION PATENTS  
CORP.,  
Plaintiff-Appellee,

8804  
STEWART-WARNER CORP.,  
Defendant-Appellant.

POTTER REFRIGERATOR CORP.,  
Plaintiff-Appellee,

8805  
STEWART-WARNER CORP.,  
Defendant-Appellant.

February 4, 1947.

Appeals from the  
District Court of  
the United States  
for the Northern  
District of Illinois,  
Eastern Division.

Before SPARKS and KERNER, Circuit Judges, and BALTZELL, District Judge.

SPARKS, Circuit Judge. By separate complaints the defendant was charged on the same day with infringement of three United States patents, to wit: No. 2,056,165 issued to Bronaugh and Potter on Oct. 6, 1936, on an application filed Feb. 16, 1931, and subsequently assigned to plaintiff, Refrigeration Patents Corp.; No. 2,171,712 issued to Potter on Sept. 5, 1939, on an application filed Oct. 25, 1935; and No. 2,258,959 issued to Potter on Oct. 14, 1941, on an application filed June 5, 1934. The latter two patents were subsequently assigned to plaintiff, Potter Refrigerator Corp.

The usual defenses of non-infringement and invalidity were pleaded, and both cases were submitted to the same jury, which returned a verdict of not guilty as to the third patent, and guilty as to the first and second patents. The jury assessed damages in favor of the Refrigeration Patents Corp., for infringement of the first patent, in the amount of \$225,000, and in favor of Potter Refrigerator Corp. in the sum of \$13,000, for infringement of the second patent. Judgments were rendered accordingly, and from those relating to the first and second patents, defendant has appealed. There is no appeal from the judgment with respect to the third patent.

The asserted revolutionary disclosure here involved is a household refrigerator which has two separate storage compartments, one called a cooling compartment, having a temperature above freezing, whose coil, therefore, never requires defrosting; and a cold storage compartment for housing frozen foods, ice cubes, and the like. The avoidance of frosting on the coil in the cooling chamber is effected by means of a thermal control on the coil in that compartment which prevents the temperature from falling to the freezing point, thus preventing the freezing of the moisture which normally condenses on the coils. The maintenance of comparative temperatures in the two compartments is also aided by the proportioned insulation of the two separate chambers (as well as by the fact of their physical separation) in that the insulation is heavier around the cold storage, or freezing, compartment. The temperature of the freezing compartment is regulated by an expansion valve in the refrigerant circuit leading to the freezing chamber. As stated in the specifications:

"This arrangement whereby one temperature is controlled by a thermostat and another by an expansion valve is a novel feature of our invention."

The specifications further state:

"The main object of this invention is the design of a refrigerator which will make it possible at one and the same time and over long or short periods of time to perform several highly desirable tasks, namely to form ice or freeze desserts quickly, to provide cold storage for frozen meat and food stuffs, and to provide storage for food at temperatures above freezing."

"The second object is to construct a cabinet in which the ice-making or freezing unit is thermally insulated from the food storage department."

"The third object is the construction of a refrigerator which is not a compromise between a quick freezing refrigerator and one which is ideal for food storing, but which possess both of these properties in maximum quantities. \* \*

"The seventh object is to eliminate completely all defrosting and objectionable drying out of the foods."

Appellees assert that heretofore in the household refrigeration art the construction has been a compromise between the desired objects of a freezing compartment and a cooling cabinet; that one of the inherent drawbacks to the single cabinet was that the freezing process withdrew moisture from foods, such as vegetables and fruits, making them less palatable, whereas in their structures the foods in the cooling chamber retained their moisture; the coil structure itself (such as a "finned" coil), in the cooling chamber is such that it retards the forming of frost, in that it has greater surface area than formerly utilized.

The claims in suit are quoted in the margin.<sup>1</sup>

We are at once confronted by the very recent opinion of the Supreme Court in the case of *Halliburton Oil Well Cementing Co. v. Walker*, decided Nov. 18, 1946. There the court held a patent invalid for failure to comply with Rev. Stat. 4888, 35 U. S. C. A. Sec. 33. That statute requires the patentee to state his invention in "such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which appertains \* \* to make, construct, compound, and use the same; and in the case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery \* \*."

It is readily apparent that the emphasis is upon clarity of the invention claimed. This is not alone to teach those interested in the art the manner of constructing the new in-

vention—it is to delimit the rights of the patentee and thereby permit others freely to do further research in bettering the invention, without fear of threat of infringement.

In the *Halliburton* case the Supreme Court held that the claim must state the "physical structure" of the device,—the physical relation of the improvement to the old machine. The claim must describe "the manner in which the \* addition will operate together with the old \* \* machine so as to make the 'new' unitary apparatus perform its designed function." It held that the claims failed adequately to depict the structure, mode and operation of the parts of the combination.

The Court further held that the claim should not describe the new element "in terms of what it will do rather than in terms of its own physical characteristics or its arrangement in the new combination apparatus," and that the same rigid standards of description required for product claims is required for a combination patent embodying old elements only.

Before applying the statutory test to the instant problem we are confronted by the further rule of law that the sufficiency of description of a claim, under the foregoing statute, is a question of fact for the jury or trial court. *Bank v. Rauland Corp.*, 146 F. 2d 19.

We have carefully studied the trial judge's admirable exposition of patent law in his instructions to the jury in the instant case. He submitted the issue of validity of the claims and their infringement, to the jury, giving them instructions on many specific angles of the patent law, but he nowhere cited this requirement of the statute, or its phraseology, nor did he submit that phase of the issue or their validity to them for their consideration and determination.

At the beginning of the instructions he stated that patents "are presumed to be valid, but that presumption can be overcome and the patents held to be invalid if they do not fulfill or come up to the legal standards and requirements. These standards and these requirements will be discussed more at length later in this charge." But the issue of clarity of phraseology was not submitted to them. It was not passed upon in the trial court's memorandum on the petition for rehearing. Nor did defendant's motion for a directed verdict mention this point. However, paragraphs 12, 13, and 15 of defendant's answers do clearly and specifically raise the issue of validity of the claims under the statutory requirement of Sec. 33.

As we view the record, there has been no determination of the validity (Concluded on next page)

1. Patent No. 2,056,165.

10. A refrigerator comprising a cabinet formed with a cooling compartment and a freezing compartment, said compartments being insulated from each other and from the outside atmosphere, an expansion line passing through the freezing and cooling compartments, said line including a freezing coil in the freezing compartment and a non-freezing coil in the cooling compartment, an expansion valve in said line at its point of entrance into the freezing compartment, means for forcing refrigerant through said line, and a controller for said means actuated by temperatures in the cooling compartment, the thermal insulation of the compartments being relatively so proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment.

11. A refrigerator comprising a cabinet formed with a cooling compartment and a freezing compartment thermally insulated from each other and from the outside atmosphere, refrigerating means for cooling the freezing compartment to a lower temperature than that of the cooling compartment, and thermo-sensitive means in one of the compartments for controlling said refrigerating means, the thermal insulation of the compartments being so relatively proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment.

12. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a refrigerating system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising an expander in each chamber and apparatus within the cabinet for circulating a volatile fluid through such expanders, said fluid constituting the sole refrigerant thus circulated, said system also including means constructed and arranged to maintain the external surface temperature of the expander in the warmer chamber above said freezing point.

14. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a chilling element in each

chamber and apparatus within the cabinet for circulating a volatile fluid through the chilling elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the external surface of the chilling element in the warmer chamber above said freezing point.

16. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a pair of chilling elements connected in series with one of the elements in each chamber and apparatus within the cabinet for circulating a volatile fluid through said elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the external surface of the chilling element in the warmer chamber above said freezing point.

18. A household refrigerator comprising a cabinet having at least two food chambers thermally insulated from each other and from the outside atmosphere, and a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point, said system comprising a chilling element in each chamber and apparatus within the cabinet for circulating a volatile fluid through the chilling elements, said fluid constituting the sole refrigerant in said system, said system also including means constructed and arranged to maintain the humidity in the warmer chamber at a relative value of at least 100% at 32° Fahrenheit.

Patent No. 2,171,712.

8. A household refrigerator, comprising a cabinet having heat insulating walls and provided with a heat insulating partition dividing the interior of the cabinet into a pair of cooling chambers, means for cooling one of the chambers to a much lower temperature than the other, the cabinet being formed with an outer doorway open, in which both of the chambers open, an outer door adapted to close said outer doorway, the cabinet being also formed with an inner doorway for the cooler of the two chambers, an inner door adapted to close said inner doorway and spaced from said outer door, and sealing means for preventing the air in the warmer chamber from circulating into and out of the space between the doors when both doors are closed.



## Text of Stewart-Warner Case--

(Concluded from preceding page)

of the claims, as to their sufficiency under the statute, unless such conclusion be inherent in a verdict and judgment of recovery against the defendant. We conclude that where, as here, there was no instruction on the matter, the issue was ignored and therefore must be determined by this court.

We have studied the claims of the patents in suit, the points raised in appellees' brief on the issue of clarity of phraseology, and the Supreme Court's opinion in the Halliburton case, *supra*. We conclude there has been such a want of clarity that, as a matter of law, the patents must be held invalid.

Appellees state:

"The contention that the means for maintaining the upper coil below freezing and the differential insulation are functionally claimed only, are technical objections that could be raised in practically any case where the claimed invention was not limited to the precise details shown. It is the last resort of the infringer brought to book."

In the Halliburton case, *supra*, the Court said:

"\* \* \* The language of the claim thus described this most crucial element in the 'new' combination in terms of what it will do rather than in terms of its own physical characteristics or its arrangement in the new combination apparatus. We have held that a claim with such a description of a product is invalid as a violation of Rev. Stat. 4888 \* \* \*"

We can not, therefore, discard as captious the statutory requirement of specificity of description.

Again, appellees state that appellant, in quoting the statute, has omitted the vital clause which provides:

"and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions." (Italics theirs.)

They further say, "This alone shows that it is not the intent, particularly in the case of a machine, that the patentee be restricted to the precise construction disclosed as his illustrative example."

As an answer to this contention, the Halliburton case, *supra*, states:

"Patents on machines which join old and well-known devices with the declared object of achieving new results, or patents which add an old element to improve a pre-existing combination, easily lend themselves to abuse. And to prevent extension of a patent's scope beyond what was actually invented, courts have viewed claims to combinations and improvements or additions to them with very close scrutiny. \* \* \* It is quite consistent

with this strict interpretation of patents for machines which combine old elements to require clear description in combination claims. \* \* \* Cogent reasons would have to be presented to persuade us to depart from this established doctrine."

Appellees say that "neither defendant, nor anyone else, need have any difficulty in determining whether its coil is so constructed and operated as to be non-frosting \* \* \*". Since a "non-frosting coil" is a desired result, and not a means, it seems evident to us that patentees should be entitled at most only to their particular inventive means to achieve that result, not every possible means which may be conceived in the future to achieve the same result. As the Supreme Court said in the Halliburton case, *supra*:

"In this age of technological development there may be many other devices beyond our present information or indeed our imagination which will perform that function and yet fit these claims. And unless frightened from the course of experimentation by broad functional claims like these, inventive genius may evolve many more devices to accomplish the same purpose. \* \* \*"

Appellees' argument continues: "As to the law cited by defendant \* \* \* that the claims are for an exhausted combination and void as claiming more than what was invented, we have shown that the invention was not in a particular element but in a new combination of elements which co-operated to produce new results. \* \* \*"

We can not view appellees' stride in the refrigerator art with such enthusiasm—there was here no new combination of elements. There was at best an old combination with some of the elements somewhat varied, such as a finned coil; or an additional element added, such as a "thermo-sensitive means in one of the compartments for controlling said refrigerating means"; or a duplication or aggregation of the old elements, such as the two separated insulated compartments in the box, instead of one old insulated compartment.

There was in appellees' alleged invention no new result—there was an allegedly improved result—i.e., non-frosting coil, and non-dehydrating of foods, which improvement the jury's verdict established.

The Court in the Halliburton case, *supra*, was dealing with a combination machine claim, and it stressed again and again the need for clarity of the new element claimed, the differentiation from the known existing combinations. Substantiation of this statement is found in the numerous quotations heretofore set forth.

We come finally, to an examina-

tion of the claims under consideration. They are for a combination of numerous elements, variously and equivalently stated in the respective claims. We have charted these elements so they can be more carefully examined, and have numbered them, for easy reference.<sup>2</sup>

Elements 1 and 2, for a "refrigerator comprising a cabinet" and "a cooling compartment" are unimportant and need no discussion. Elements 2 and 3, "a chamber cooled above freezing point" and a "freezing compartment" are not *per se* new. The alleged invention lies in the combination and maintenance of both a cooling and a freezing chamber in the same ice cabinet. Elements 7, 9, 10, 11, and 12, also need no discussion.

The composite phraseology of element 4 as it appears in all the claims involved in the suit may be stated thus:

Compartments being thermally insulated from the outside and each other, the thermal insulation of the compartments being relatively so proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment.

This language is not "exact." No attempt is made to teach what are the desirable proportions in the thermal insulation. It is obvious that inflow or exclusion of heat would vary with the degree of insulation. This is hardly a "written description \* \* \* of the manner of \* \* \* constructing \* \* \* in such full, clear, concise, and exact terms as to enable any person skilled in the art \* \* \* to construct \* \* \* the same." The instruction is as vague and broad as could possibly be.

The essence of element 5 is: an expansion line passing through

the freezing and cooling compartments.

for cooling the freezing compartment to a lower temperature than that of the cooling compartment

or arranged to cool one of said chambers far below the freezing point of water and the other chamber above such freezing point.

This element seems to us to state simply the desired result, or the result achieved, without in any manner telling how the end is to be achieved. If it were to be held valid, it would cover any conceivable means hereafter invented where the results stated were obtained, if the present expansion line system were utilized in any form. Such broad coverage is obviously not permissible under the teachings of the Halliburton case, *supra*.

Element 6, appearing in claim 10 only, does present a more serious question. It is "a non-frosting coil in the cooling compartment." It is this non-frosting coil which saves the housewife the chore of repeated defrosting of the box, with some possible inconvenience and possible spoilage of foods, especially frozen foods. However, here again we have only a claim of a result without the statement of the means whereby that result is to be obtained. Nowhere in the specifications or drawings is a special kind of coil shown whose structure, such as "finning" might be a frost-collecting deterrent. Indeed, it was agreed by the experts of all parties that a coil may be non-frosting when it is operated in one way, and become frosted if operated in another way. Clearly, the non-frosting coil is the result of the

use of the combinations upon which plaintiffs seek to sustain the patents.

Element 8 describes a thermo-sensitive means in one of the compartments for controlling said refrigerating means

or a controller for said means actuated by temperatures in the cooling compartment

or means constructed and arranged to maintain the external surface in the expander in the warmer chambers above said freezing point.

Here again, vagueness of description of "means" to achieve the result is evident.

As we read all these claims they are merely a description in the most general terms of the machine patentees had in mind. If they achieved patentable invention, as the jury and trial court believed, they have failed to describe it with the precision required by Sec. 33, 35 U. S. C. A., as interpreted by the Halliburton case, *supra*.

Claim 8 of patent No. 2,171,712, covers the same sort of machine as the patent above dealt with except that there is an inner sealing door on the freezing compartment to further effect the retention of cold in said chamber and exclude the outside atmosphere. It is subject to the same defects as is the first patent.

The judgments of the District Court are reversed.

A true Copy:

Teste:

Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.

# 4

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2. Element	Appears in Claim No.	above said freezing point	14, 16, 18
1 A refrigerator comprising a cabinet	10-14, 16, 18		
2 a cooling compartment	10, 11		10
3 a chamber cooled above freezing point	12, 14, 16, 18		
4 a freezing compartment	10, 11		
5 a chamber cooled far below freezing point of water	12, 14, 16, 18		
6 compartments being insulated from the outside and from each other and from the outside atmosphere	10		
7 thermally insulated from each other and from the outside atmosphere—	11, 12, 14, 16, 18		
8 the thermal insulation of the compartments being relatively so proportioned as to admit a greater inflow of heat into the cooling compartment than into the freezing compartment	10, 11		
9 an expansion line passing through the freezing and cooling compartments	10		
10 refrigerating means for cooling the freezing compartment to a lower temperature than that of the cooling compartment	11		
11 refrigerating system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber above said freezing point	12		
12 a compressor-condenser-expander system constructed and arranged to cool one of said chambers far below the freezing point of water and the other chamber			
			16




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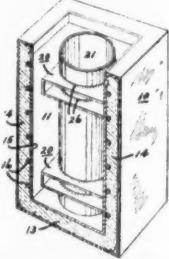
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## PATENTS

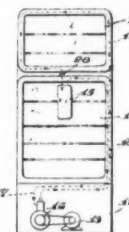
Week of Dec. 17  
(Continued)

2,412,756. **SPACING AND POSITIONING DEVICE FOR REFRIGERATING APPARATUS.** Jasper A. Smith, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application June 5, 1944, Serial No. 538,780. 2 Claims. (Cl. 220-15.)



1. A device for preventing a cylindrical container positioned in a refrigerated compartment having flat opposed walls from rotating as ice cream is dispensed from the container, said device, when in use, comprising a unitary member engaging said walls of the compartment and having spaced apart and connected together similar horizontal substantially rectangular walls, each of said spaced apart horizontal walls of said member being provided with an opening therein, the openings in said walls of said member being aligned with one another and having their edge portions embracing the cylindrical container at spaced apart points therealong, the openings in said walls of said member being uniform in diameter so that their edge portions will embrace the cylindrical container at a plurality of positions along the length thereof, and the openings in said walls of said member being smaller in diameter than the outer surface of the container whereby said edge portions thereof frictionally grip the container with such force that said member is removable from the compartment along with the container.

2,412,774. **CONDENSE HEATED COMPARTMENT.** Charles M. E. Hoffman, Annapolis, Md. Application Sept. 10, 1943, Serial No. 501,903. 9 Claims. (Cl. 62-116.)

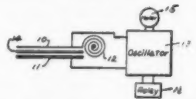


1. In a mechanical refrigerator, the combination of refrigerant condensing means, a cabinet having non-insulated walls providing an enclosure, said walls comprising spaced sheets of heat conductive material, and said condensing means extending into the space between said sheets and having heat exchange relationship therewith.

2,412,782. **WET BULB THERMOMETER AND THERMOSTAT.** Robert T. Palmer, Sharon, Mass. Application May 26, 1944, Serial No. 537,507. 12 Claims. (Cl. 236-44.)

7. A device responsive to changes in the wet bulb temperature of air, comprising means including means exposed to air, providing an electric current flow, means for changing the strength of said current conformably with increases in the mois-

ture content of the air, and means including means responsive to dry bulb



temperature changes in the air for oppositely changing the strength of said current conformably with increases in the dry bulb temperature of the air.

2,412,881. **CONTROL SYSTEM.** Wilbur C. Fulton, Wilkinsburg, Pa., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Sept. 14, 1944, Serial No. 554,113. 4 Claims. (Cl. 177-311.)

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$2.50 per insertion. Limit 50 words.  
RATES for all other classifications \$5.00 per insertion. Limit 50 words.  
ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

### POSITIONS WANTED

**YOUNG MAN**, married, two children, with three years mechanical engineering and graduating this June with Bachelor of Science degree in Business Administration, desires position with a refrigeration and air conditioning manufacturer in purchasing department. Preferred location east of Mississippi River. **MILES J. JORGENSEN**, 863 Stewartstown Road, Morgantown, W. Va.

**FACTORY REPRESENTATIVE**—proven executive and sales ability, engineering education, 18 years in refrigeration and air conditioning, experienced contacting manufacturers, jobbers, and distributors as sales and application engineer. Wants position with manufacturer as field representative working out of St. Louis, Mo. Salary or commission basis. References, BOX 2211, Air Conditioning & Refrigeration News.

**SERVICE ENGINEER**—proven ability. Desires permanent position with distributor or dealer in south or west coast. Capable of supervising, service and installation of air condition, lockers, etc. Age 46, diversified experience, 10 years factory, 13 years installation and field service of refrigeration. Best of reference. BOX 2236, Air Conditioning & Refrigeration News.

**REFRIGERATION MECHANIC**—commercial, 4½ years experience, college graduate, married, age 29, Japanese, installing, servicing and maintenance up to 15 hp, multiplex units and temperatures. Good reference, now employed in New Jersey. Available after March 1st. BOX 2244, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

**EXPERIENCED COMMERCIAL** refrigeration salesman wanted at once. Work on percentage basis. Excellent territory in ideal year around climate. Must know how to figure commercial equipment. Both franchised and non-franchised equipment to be sold in Monterey and Santa Cruz Counties, California. Housing available. **ARCADE REFRIGERATION CO.**, Box 327, Aptos, Calif.

**WANTED: REFRIGERATION** mechanic, capable of installation and service all types equipment. Permanent job, good pay. **RICHARDSON & RICHARDSON, INC.**, 88-90 Park Ave., Nutley, N. J.

**APPLICATION-SALES** engineer—position with fast growing refrigeration and air conditioning equipment manufacturer. 5 to 50-hp, condensing units. Located central west. Unusual opportunity for men with sales experience and refrigeration training, between ages of 28 to 35. Give full details, salary desired, etc. Sales Manager (confidential), 1016 East Columbia, Evansville, Ind.

**FACTORY REPRESENTATIVE** and salesman to represent manufacturer of ice cream freezers, frozen food cases, and double duty display cases; to local retail dealers in the state of South and North Carolina & Virginia. BOX 2233, Air Conditioning & Refrigeration News.

**SALES ENGINEER** wanted: We have opening for young man capable of figuring locker plants and other low temperature applications. Our firm has excellent rating, located in Middle West. If you can qualify, your earnings can be over \$6,000 per year. BOX 2235, Air Conditioning & Refrigeration News.

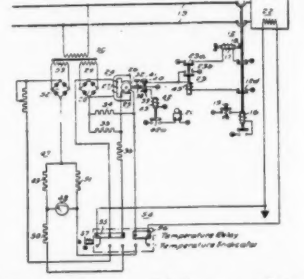
**WANTED—ENGINEER**, opportunity for young sales minded engineer to work with export firm representing leading manufacturers of refrigeration and air conditioning equipment. Must be good correspondent and willing to travel. State salary and details concerning educational background and experience. BOX 2240, Air Conditioning & Refrigeration News.

**REFRIGERATION FIELD** service engineer—cover eastern seaboard and middle states for old established New York firm. Handle technical refrigeration service and liaison with national distributors, dealers, service organizations. Experience self-contained package units desirable. Mail complete resume experience, qualifications, age, willingness to travel, salary desired. BOX 2241, Air Conditioning & Refrigeration News.

**WANTED: ENGINEER** with college degree, to affiliate with large Baltimore trade school, teaching air conditioning and refrigeration as chief instructor. Prefer man with past teaching experience and operation of trade school. Well compensated financially, if qualified. State age, experience, etc. BOX 2242, Air Conditioning & Refrigeration News.

**LOS ANGELES** refrigeration contractor wants aggressive man with commercial refrigeration sales experience, capable of assisting manager with creative sales promotion ideas, and capable of compos-

1. A temperature responsive control system for use with apparatus comprising, a temperature detector coil associated with the apparatus, a temperature responsive relay having an operating winding connected for energization in accordance with the temperature of the detector coil and provided with normally closed contact means and normally open contact means actuatable in sequence in accordance with the energization of said winding, alarm means operable under the control of the normally closed contact means of the temperature responsive relay when the apparatus reaches a predetermined operating temperature, and relay means operable under the control of the normally open contact means of the temperature responsive relay when the ap-



paratus reaches a higher predetermined operating temperature to render the apparatus inoperative.

(To Be Continued)

4 in. Fiber \$1.20 for freezers 6 in. Fiber \$1.40 per sq. ft. Cork insulation prices on request. Limited number new refrigeration units, coils, etc. available. Send us your requirements. **REFRIGERATION SPECIALTIES, INC.**, 721 Flushing Ave. Brooklyn 6, N. Y.

**IMMEDIATE DELIVERY**—new Copeland units with motors. Model 204 AFL—2 hp.—1PH—220 V—\$345. Model 304 WFL—3 hp.—1PH—220 V—\$465. New sectional storage coolers. 6 ft. wide, 8 ft. long, 6 ft. 6 in. high. Door in end. Dry fir lumber. 4 in. insulation, \$365. M. R. ROBERTSON, 2913 Columbia Road, Madison, Wis.

**FLOAT REPLACEMENTS.** For replacing defective high side floats on all household units. Regular charging connection, capillary tube setup, internal strainer and exact mounting plate. Part #2000—Westinghouse (4 hole plate), and #2010 (3 hole plate); Part #2020—Gibson Part #2030—General Electric (DR-1 & DR-2). Part #2040—For general replacement (undrilled plate). \$6.75 each **SEALED UNIT PARTS CO.**, 3097 Third Ave., New York 56.

**SEALED CROSLLEY TERMINALS.** Installed from the outside in a few minutes without opening the compressor. Correct leaky terminals on all Crosley "F-12" units. Set of three \$6.75 (Part No. 1020). Installation tool \$1.65. Immediate delivery. Money-back guarantee. **SEALED UNIT PARTS CO.**, 3097 Third Ave., New York 56, N. Y.

**FRIGIDAIRE METER-MISER** Terminals. Installed from the inside. Fits compressors with bottom-mounted terminals (Part No. 1060). Set of three \$2.85. **WESTINGHOUSE TERMINALS.** Installed from the inside. (Part No. 1030). Set of three \$2.85. **SEALED UNIT PARTS CO.**, 3097 Third Ave., New York 56, N. Y.

**NORGE CHECK VALVES.** For open-type units. (Part No. 1040). \$2.55 each. **SEALED NORGE** terminal, packing washers. For repairing leaky terminals. Installed from the outside in a few minutes. (Part No. 1050). Three sets (9 washers) \$1.00. **SEALED UNIT PARTS CO.**, 3097 Third Ave., New York 56, N. Y.

**SEALED NORGE** terminals. Complete assembly. Replaces shorted terminals. Installed from inside. (Part No. 1100). Set of three \$2.85. Sealed Crosley terminals. Installed from inside. Part No. 1070 for SO2 models. Part No. 1080 for "F-12" models. Part No. 1090 for "F-2" models. Set of three \$2.85. **SEALED UNIT PARTS CO.**, 3097 Third Ave., New York 56, N. Y.

**UNDERBAR WORKBOARDS**, cocktail stations, dry beverage coolers and beer dispensers designed for water bath, circulating air, Temprite tanks and Penfo cooling systems for immediate delivery by one of the oldest bar interior equipment manufacturers in the East. **SUPREME METAL FABRICATORS, INC.**, 27 Rodney St., Brooklyn 11, N. Y.

**SECTIONAL WOOD** walk-in storage boxes, 4 in. Fiberglass insulation, fir front spruce interior, steel saddle. Built to specified size. Seven day delivery. \$1.30 per square foot, F.O.B. New York. Condensing units available with box orders. Complete stock blowers, coils, plates. **WHOLESALE DISTRIBUTORS, INC.**, 150-19 Liberty Ave., Jamaica 4, N. Y. Jamaica 6-1733.

**IMMEDIATE SHIPMENT** out of stock on all sizes blowers and coils for every cooling purpose. Special coils one week delivery. Complete stock of Kold Hold Freezer, truck plates, 16-cu. ft. Liners. Reach-in boxes with units available. **WHOLESALE DISTRIBUTORS, INC.**, 150-19 Liberty Ave., Jamaica 4, N. Y. Jamaica 6-1733.

½-1-1½-2 hp. condensing units complete with single phase motors. Meat and Bone cutters complete with both 1 and 1½ hp. motors. BOX 2204, Air Conditioning & Refrigeration News.

**NEW 3 hp. water cooled** compressors 3/32/220/440 volts—standard make machines. ¾ in. copper tubing. BOX 2245, Air Conditioning & Refrigeration News.

### FRANCHISES WANTED

**MANUFACTURERS' REPRESENTATIVE** covering Ohio, Michigan, Indiana, West Virginia and Indiana, many established commercial dealers and distributors on other lines, sixteen years' sales and sales engineering background. Seeking additional lines, preferably water coolers and 1-10 ton package air conditioning. To reputable manufacturers I can assure satisfactory representation. BOX 2238, Air Conditioning & Refrigeration News.

### BUSINESS OPPORTUNITIES

**ATTENTION HOME** freezer manufacturers: Patent rights for sale or lease on device that will make perfect ice cream in any low temperature storage unit. Excellent accompaniment with your freezers. This is a proven product. BOX 2234, Air Conditioning & Refrigeration News.

**A REFRIGERATION** and air conditioning repair business for sale in a prosperous Florida port city, population around 75,000. Enjoying a good year round business in an ideal climate right on the Gulf of Mexico. A 1946 Ford pick-up goes with business. Reason for selling—other business interests. BOX 2237, Air Conditioning & Refrigeration News.

ing advertising. Refrigeration engineering experience very helpful, but not essential. Give full particulars in first letter. BOX 2243, Air Conditioning & Refrigeration News.

### EQUIPMENT WANTED

**NEW OR** used York 4 x 4 2-cylinder self-contained ammonia condensing unit with 10-hp. motor for 220-3-60, or less motor and starter. State price and approximate age if used. **CONDITIONED AIR, INC.**, P.O. BOX 834, Macon, Ga.

### EQUIPMENT FOR SALE

**SECTIONAL WALK-IN** coolers built to your specifications. Chrome hardware. Oak trim door. Fir front. Seasoned spruce. Metal saddle. Fiberglass insulation. Week delivery. Quantity discount. Buy direct from manufacturer and save. Send us your requirements. **COOLER KING MFG. CO.** (Wholesale only.) 739 Myrtle Ave., Brooklyn 5, N. Y.

**IMMEDIATE DELIVERY**—new air conditioning equipment. Weathermakers complete with motor, "Freon" coil, etc. 2 ton to 25 ton. SWSI, DWDI, and twin centrifugal blowers, propeller fans, heating and cooling coils, evaporative condensers, self-contained air conditioning units, condensing units. **CONTROLTEMP CORP.**, 236 Butler St., Brooklyn 17, N. Y.

**CONDENSING UNITS** (Genuine) ¼ and ½ hp. complete. Write for particulars and prices. Good quantities available. **DRAFT-MASTER REFRIGERATION, INC.**, Designers—Manufacturers, 1703-5 W. Baltimore St., Baltimore 23, Md. Gilmor 2185—Edmondson 4542.

**FOR SALE:** 1,000 new flip covers and frame assemblies for freezers and ice cream cabinets. Two popular sizes. ¼ to 2 hp. new and remanufactured condensing units, also new aluminum ice cube trays. **EDISON COOLING CORP.**, 310 E. 149th St., Bronx 51, N. Y.

**IMMEDIATE DELIVERY** freezers open and closed glass top, stainless steel top, canopy type, 20-44 cu. ft. Florist Dairy boxes, bottle coolers, double duty display cases. Ice cream cabinets, storage boxes, wood-metal. 4-6 can milk coolers, reach-in refrigerators. Water Fountains. **FRIGITEMP CORP.**, 931 Bergen St., Brooklyn 16, N. Y. MA 2-9093.

**TWO 5 hp. 200/400 V—3 hp. General** Electric condensing units. One Victor Bulk Ice maker—300 lbs. capacity. One Wilson 4 door zero degree farm freezer. Crated and available for immediate delivery. **FROZEN FOOD STORAGE, INC.**, 939 Gulf Building, Pittsburgh 19, Pa.

**FROZEN FOOD** cases (open type) with superstructure, dry beverage coolers, home and farm freezers, ice cream cabinets, reach-in refrigerators. All equipment with and without units. Immediate delivery, attractively priced. Exclusive distributorships available. **GENERAL REFRIGERATORS CORP.**, 678 Broadway, New York (12) ST 9-1222.

**ONE 6½ x 6½** York ammonia compressor and high side complete at present has a Steam operating; for sale with or without unit. Good condition. One 3 x 3 York self-contained ammonia condensing unit with coils enough for a 175 locker cooler room; good shape. **IRVEN A. LARSON COMMERCIAL REFRIGERATION**, Faribault, Minn.

**FOR SALE** Imperial No. 98-F refacing tools complete with five adaptors. Price \$4.50 postpaid. E. J. LOWE REFRIGERATION SERVICE, Box 1308, Jacksonville, Tex.

**1000 MOTORS**, FOR sale, from stock ½ hp.—3425 RPM—3 ph/230 V. (Under-bearing—easily equal to ¾ hp.) Ball-bearing, for vertical or horizontal. Enclosed Fr. ¾ in. shaft. \$36 each. This rugged motor cannot burn out. (Glass insulated wire coils.) **MODERN SUPPLY CO.**, 206 Fulton St., New York 7—CO 7-0100.

**400 POUNDS DRIERITE** in 5 lb. sealed jars, also 125 Hi-Low beer faucets. Both items offered at greatly reduced prices. **S. J. O'BRIEN SALES CORP.**, 560 West 34th St., New York City 1, N. Y. Attention: H. A. Elman.

**TWO CARRIER** or Universal completely self-contained, new air cooled refrigerating plants. Choice of 7½ hp., electric motor or 10 hp., gasoline engine. Complete high and low side. Automatic controls, defrost system, gauges, spare parts, and tools. Crated for export. Wire or phone **PHILIPS & CO.**, Columbia, Mo.

**COMPRESSORS AND PARTS** rebuilding—Compressors, float valves, water valves, low pressure controls, evaporators, water cooled condensers, condensing units and many other items replaced from our large stocks, or repaired upon receipt of your defective material. Send for our catalog-prices listed. **REFRIGERATION MAINTENANCE CORP.**, 321 E. Grand Ave., Chicago, Ill.

**SECTIONAL WALK-IN** Coolers. Kiln dried fir front, spruce interior. Chrome hardware, metal saddle, finished shellac



## Worthington Post Goes to Williams

HARRISON, N. J.—S. Riley Williams, who has been associated with Worthington Pump & Machinery Corp. since 1920, was elected vice president in charge of foreign business at a recent meeting of the board of directors.

A company announcement said Mr. Williams will be responsible for the sale of Worthington products for export and for the administration of Worthington associated companies in South America and Europe. He will make his headquarters at the home office here.

Mr. Williams joined the Worthington organization immediately following his release from the U. S. Army in which he served as a first lieutenant during World War I. From 1920 until 1941, he resided in Europe where he was successively managing director of Worthington associated companies in Spain and France and general European manager.

In 1941, he returned to the United States, serving as assistant to the vice president in charge of operations during the last war. In May, 1945, he was appointed director of international business.

## Expanding British Firm Designs New Line of Household Appliances

WASHINGTON, D. C.—The Commerce Department, quoting the British press, reported recently that a well-known British firm, "already one of the largest producers of electric heaters, cookers, and water heaters in the country," is developing a new line of household electrical appliances as part of a sizable expansion program.

This line, the department said, is to be manufactured in a recently acquired wartime aircraft factory at Blythe Bridge, Staffordshire. At first, however, the firm will use the new plant to produce cookers, wash boilers, storage water heaters, and immersion heaters for the domestic and export markets.

Other expansion activities included re-equipping of the concern's Oldbury, Birmingham, plant at a cost of £200,000, and purchase of the business of a long established manufacturer of electrical accessories and switch gear. Several other purchases were made.

The firm is composed of various electrical engineering industries in the United Kingdom. It was not identified by name.

## WAA OK's Export Sales Of Valves, Fittings, Motors

WASHINGTON, D. C.—The War Assets Administration has released a list of 81 consumer and capital goods government surplus items which now may be sold to exporters for disposal outside this country. The list includes silica gel, valves and pipe fittings, and electric motors (a.c., 110 volt, 3 phase).

## Ceylon Firm To Build Plant

COLOMBO, Ceylon—American firms have been asked by Perera & Son, Ltd., here to bid on erection of an ice making plant capable of producing 20 tons a day.



## Export Volume Seen Passing \$14 Billion By Gifford 'If We Organize Properly'

CHICAGO—An ultimate annual export volume in excess of \$14 billion for the United States is regarded as likely by R. W. Gifford, chairman of the board of Borg-Warner International Corp.

Mr. Gifford, who is also vice president and assistant general manager of Norge Division, Borg-Warner Corp., told the Chicago Federated Advertising Club recently that "the pent-up demand in the world for our merchandise is beyond belief." He said the latest figures show "we are now running at about 10 billion and this with limited production and shortages in many lines."

But fullest advantage of market possibilities can be taken only "if we organize properly," Mr. Gifford advised. He suggested that exporters should be organized so as to carry some weight with Washington, that the government should be organized so as to offer real assistance to American business, and that business must put its own house in order.

### VOLUME SELLING ESSENTIAL

One of the things business must do, he stressed, is to extend help, and plenty of it, to foreign distributors so they can "do a job." This applies particularly to the development of mass selling, he said.

"The distribution of American merchandise abroad is now entering its second and most profitable stage," Mr. Gifford observed, "but we must do our own part by educating these people in the fundamentals of volume selling. You all know how closely sales, advertising, and sales promotion are tied together in a job of this kind."

Selling methods in all other countries except Canada he describes as "far behind those in this country."

"There are always some exceptions, but on the whole, we have left the actual selling and the methods for so doing to the local foreign distributor," he declared. "If they produce a substantial dollar volume, we are inclined to be satisfied, whereas, actually they might have produced several times as much."

Large-scale and scientific advertising, Mr. Gifford proposed, can bring about mass consumption of American products abroad as it has at home if advertisers will:

- "1. Make careful analyses of the markets for their products.
- "2. Study the psychology of the people to whom they are trying to sell.
- "3. Run copy tests to determine the effectiveness of various approaches.
- "4. Set up and continue campaigns to hold existing customers and develop new ones."

### WARNS OF MISTAKES

He warned, however, that many serious mistakes can be made in planning an advertising campaign.

"In this country," he pointed out, "you can show reader coverage of the various types of dealer or consumer readers and easily relate the percent of advertising to sales. Abroad, it is a different problem."

"The potential market may be so small in dollar volume in even a large country that the usual percentage would get you nowhere if spent as we would spend it here. Then, again, there are generally no nationally read magazines or papers covering the entire market."

"Furthermore, the manufacturer's margin is relatively small whereas the local distributor sometimes takes the landed cost and ups his price to maybe three times that figure. In such cases, the advertising burden should be passed on to the distributor."

### WILL SPEND IF PROFITABLE

"He is generally willing to spend money if he can see a fair return, but to get this, he needs help from you as to how to develop a market. You may not be able to write the exact copy that he will use, but you can certainly do a lot of guiding and this guidance should be along with the advice of sales people who are handling the territory and know what it is all about."

In addition to emphasizing advertising, Mr. Gifford made these other points with regard to foreign distributorships:

"1. Select your distributor or your own branch staff with the greatest of care. It's far more important than it is in this country."

"2. Periodic personal contacts from your own company are of next importance. This includes top export sales representatives and sales engineers who know what products satisfy the market and make the product operate. Probably the most important of all would be occasional visits from top company officials."

It is important for export men to realize, Mr. Gifford told the advertisers, that the foreign distributor has every problem of those here plus a great many more. He has the same competition or more, because he may have all the U. S. manufacturers plus some local ones as well as suppliers from other countries, it was explained.

### DISTRIBUTOR'S PROBLEMS

"He has never had his market built up for him by millions of dollars of national advertising," Mr. Gifford continued. "He cannot use most of our sales promotion helps because of language differences."

"He cannot call the home office to ask them to solve his problems and in most cases only hears from the American manufacturer at odd intervals . . . frequently the letters received from the same American manufacturer may have been written by someone who knows nothing about the subject involved."

"Then, he must handle and solve his own service difficulties with very little help from the American supplier. . . . Many American companies have never sent a serviceman abroad."

"We say advertising men, sales managers, fieldmen, and national servicemen are a part of sales. I agree that they are. Then, why not apply the same reasoning abroad?"

## Palestine Pictured As Fertile Market

NEW YORK CITY—Palestine, part of the consumer-goods-hungry Middle East, is in "great need" of refrigeration and air conditioning products and other household appliances.

So says a report received from Aron Advertising Agency, Palestine, an associate of members of the Association of Export Advertising Agencies.

These products are "almost non-existent" there, the report states, but the demand is great.

Various other products also are much sought after, it is said. Listed in the trade review are passenger cars and trucks, industrial machinery, drugs, and cosmetics.

Palestine, the agency believes, is the "logical gateway" to the Middle East, which it calls "a new market of potentially vast proportions."

"This market, hitherto unexplored and as yet unexploited, must expand and yield a rich harvest to any exporting country," it thinks. "In a sense the 'East' is receding further east, and with the destruction of Europe the western influence has been imposed to an ever-increasing degree on this part of the world."

"In no one part . . . is this more noticeable than in Palestine where efficiency in production, distribution, and merchandising has reached a standard comparable to that in any well organized state—and this in spite of numerous obstacles and the severest conditions. . . ."

"During the war years, Palestine's contribution to the Allied effort . . . was extremely great. . . . Other countries in the Middle East, in spite of their near or even complete neutrality, had riches thrust upon them. . . ."

"The end of the war found all these countries demanding a huge quantity of consumer goods of all descrip-

tions . . . each country had accumulated large credit balances in sterling (Palestine alone 110 million pounds)."

Although convinced that Palestine has "great prospects" for the future, the agency acknowledges that "owing to the uncertain political situation it is difficult to foretell how matters might develop."

## Former Refrigerator Maker Named Norge Swiss Outlet

CHICAGO — The Royal Co. of Zurich, former manufacturer of the Odag absorption-type mechanical refrigerator, has been commissioned as exclusive distributor in Switzerland for Norge major household appliances.

J. W. De Lind Jr., president of Borg-Warner International Corp., said Royal will distribute Norge refrigerators, gas and electric ranges, space heaters, and washing machines. It also will distribute vacuum cleaners and other household appliances making up the line of Hamilton-Beach Co. products.

## Expect Ecuador To Demand More Commercial Equipment

WASHINGTON, D. C.—Although commercial refrigeration equipment is not used extensively in Ecuador, an increasing demand is expected, according to the Office of International Trade, U. S. Department of Commerce.

"In the sierra region where temperatures are never high such equipment has not been considered a necessity," OIT said. "The need is greater on the coast where temperatures are quite high for several months of the year, but even there little of the commercial type is used except in the breweries which have ice-making as well as refrigerating facilities."

"Distribution is handled by agents in Guayaquil and Quito."

**MARVEL of BEAUTY**

**Marvel of Efficiency**

6, 8, or 10 feet long  
39 inches high, 30 inches wide

**Dry Beverage Cooler**

Beautiful stainless steel and polished aluminum outside with polished aluminum interior. Heavy duty fin-type coils, designed to give fast cooling and less frosting. Rugged construction, first quality materials throughout. Stainless steel lids slide away or lift out. 8-inch utility shelf. Removable dividers inside. Toe space under edges.

**MARVEL Quick Freeze**

**Storage Locker**

INSULATION:  
5 inches thick

CAPACITY:  
12 cubic feet

SIZE:  
72 inches long  
30 inches wide  
34 inches high

COMPRESSOR:  
1/4 Horsepower heavy duty motor

RANGE:  
From 15° below zero to 3° above zero

De Luxe model shown is stainless steel throughout. Other models have stainless steel tops with baked on white enamel or polished aluminum sides. Smooth inside surface for easy brushing off of frost. Large lid—23 x 45. Toe space.

**DEALERS WANTED**

**W. ALLEN ROGERS Industries**  
BOX 272-AC DEMOPOLIS, ALA.

**SINCE 1939...ZEROSAFE by WILSON**

**THE GREAT NAME IN FREEZER DESIGN**

SINCE 1939 Wilson ZEROSAFE has been the greatest reach-in farm freezer in America... THE NEW WILSON ZEROSAFE IS NOW GREATER THAN EVER BEFORE... Not a toy, but big, ruggedly beautiful, efficient, with stamina for years of low-cost operation.

**SIZES FOR EVERY NEED FROM 15 TO 120 CU. FT.**

WILSON ZEROSAFE FARM FREEZER  
Sectional Model FF-60

FOR FRANCHISE INFORMATION ADDRESS DEPT. II: WILSON REFRIGERATION, INC., SMYRNA, DELAWARE



## Potter Patents--

(Concluded from Page 1, Column 5)  
Commenting on the Potter interests' claim that a new combination had resulted, the Appeals Court judges said:

"There was here no new combination with some of the elements somewhat varied, such as a finned coil; or an additional element added, such as a 'thermo-sensitive means in one of the compartments for controlling said refrigerating means'; or a duplication or aggregation of old elements, such as the two separated insulated compartments in the box, instead of one old insulated compartment."

Comments by the judges on the patentability of the Potter claims

## Freezers Shipped--

(Concluded from Page 1, Column 4)  
accounted for only 13% of the total self-contained freezers during the second quarter, accounted for 28% of the total during the third quarter.

Although shipments of self-contained freezers increased in the small and intermediate size groups, there was a decrease of 35% in the 16 to 20 cu. ft. classification, and a decrease of 3% in the over 20 cu. ft. self-contained type.

While reports were received from the Bureau of Census from 155 companies on Form M52A, Part IV, Home and Farm Freezers, only 94 companies were active during the third quarter of 1946.

Eleven of the companies that reported during the second quarter of 1946 have discontinued the manufacture of home and farm freezers, but 10 companies that were not in production during the first half of the year are now active in this industry, it was reported by the bureau.

Home and farm freezers tabulated in this survey include refrigeration cabinets or chests designed for freezing or storing frozen food, or a combination of both purposes, for use in the home or on the farm. Cabinets shipped without freezer units have been excluded, as well as commercial locker plant equipment and frozen food display and dispensing equipment used for commercial purposes in groceries or confectionery establishments.

## Ohio Contractors Told of Need for Group Effort

TOLEDO—At a dinner meeting which incidentally marked the first birthday of the National Association of Refrigeration Contractors, members of the recently-organized Refrigeration Contractors Association of Northwestern Ohio heard Ed Wright, first vice president of NARC, review the founding, progress, and future plans of the national group.

Held in a local restaurant, the meeting drew 28 contractors from Clyde, Delta, Findlay, Fremont, and Toledo, Ohio, and Monroe, Mich. Paul Sizer, president of the Ohio association, presided.

Mr. Wright told the group that the hopes of NARC's founders were more than justified by a present membership of over 800 in 175 cities in 38 states.

Refrigeration contractors, he declared, now are recognized as an important segment of the industry by other industry groups and by governmental agencies.

Studies and observations prove, he pointed out, that the only effective way to attain profitable results is by numerous, strongly-cooperating local associations working with their national association. Aggressive efforts will be made this year to induce contractors to "get together and stay together" through regular monthly meetings, he said.

In describing activities of NARC, Mr. Wright noted attempts to alleviate the "Freon" and small-motor shortages; progress on unfair trade practices; compilation of information and assistance on labor relations, codes, and licensing; progress in straightening out some of the distorted distribution methods in the industry; work on industry statistics, organization of local associations, collection of business operating forms, and other measures.

The Ohio association is an affiliate of NARC. Its headquarters are in Toledo.

for a "non-frosting coil in the cooling compartment" may be of interest. The judges state:

"It is this non-frosting coil which saves the housewife the chore of repeated defrosting of the box, with some possible inconvenience and possible spoilage of foods, especially frozen foods."

"However, here again we have only a claim of a result without the statement of the means whereby that result is to be obtained. Nowhere in the specifications or drawings is a special kind of coil shown whose structure, such as 'finning,' might be a frost-collecting deterrent."

"Indeed, it is agreed by the experts of all parties that a coil may be non-frosting when it is operated in one way, and become frosted if operated in another way. Clearly, the non-frosting coil is the result of the use of the combinations upon which plaintiffs seek to sustain the patents."

## Inventory Curbs--

(Concluded from Page 1, Column 3)  
have proportionate shares of them.

Priorities Regulation 32 is intended to "prevent excessive inventories by restricting ordering, deliveries, receipts, and processing of materials in short supply." This order further states:

"A person whether buying for use or resale, including a person buying for export, may not accept delivery of any material if his inventory of that material is, or will be, more than a practicable minimum working inventory, reasonably necessary to meet his own deliveries or to supply his services on the basis of his current or scheduled method and rate of operation."

Lifting of Order L-219 does not mean that all merchandise is plenti-

ful, emphasized CPA. The move was made now, the agency explained, because many of the "controlled merchants" end their fiscal year on Jan. 31, and thus would be free of considerable accounting and paper work in connection with L-219.

Revocation of L-219 does not affect Order L-63 which provides inventory control on "hard line" merchants selling automotive, building, and hardware supplies.

## 1946 Washer Sales Establish Record

CHICAGO—Breaking all previous records for the industry, factory sales of household washers totaled 2,023,981 units in 1946, announces the American Washer and Ironer Manufacturers Association. Previous high was 1,959,887 in 1941.

Ironer sales in 1946 were 124,616, well below the 1941 figure of 215,994.

## Joy Elected President of Chicago Commercial Group

CHICAGO—Perry E. Joy of the Super-Cold Midwest Co. was elected the second president to preside over the Commercial Refrigeration Distributors Association of Chicago at the group's annual meeting last week. W. H. Sudekum of Hussmann Refrigeration, Inc., who led the association through its first two years, was elected a director at large.

Other officers named for the coming year are: Frank Murphy of McCray Refrigerator Co., vice president; Walter McCarty of McCarty Brothers Equipment Corp., secretary; and Irving W. Shell of Lee-Shell Corp., treasurer.

The Chicago group is one of the first to be formed under the sponsorship of the CRMA.



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These Bush representatives are always ready to help you put the right Bush equipment into every job. And, because it's Bush equipment . . . has 40 years of engineering skill behind it . . . you can be sure it is correctly designed, conservatively rated, ruggedly built. You can be sure it will give years of trouble-free service.

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